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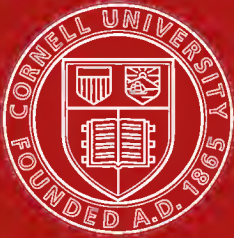
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UNIVERSITY OF PENNSYLVANIA

EIGHTH REPORT

OF THE

HENRY PHIPPS INSTITUTE

FOR THE STUDY, TREATMENT, AND
PREVENTION OF TUBERCULOSIS

FACTORS AFFECTING THE HEALTH
OF GARMENT MAKERS

BY

H. R. M. LANDIS, M.D.

DIRECTOR OF THE CLINICAL AND SOCIOLOGICAL DEPARTMENTS

AND

JANICE S. REED

RESEARCH ASSISTANT IN SOCIOLOGY

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PREFACE.

There is no industry which has been so much investigated as that of garment making. To add another study to the already long list of contributions on the subject can be justified only on the ground that it furnishes facts which other studies have ignored. This we believe we have done. As to whether the information we have gathered will be of any service in throwing light on the subject of industrial hygiene must be determined by those who have labored for years in this field.

Lacking official authority to make the study, the work was frequently delayed in trying to gain the consent of employers to permit a survey of their establishments. In not a few instances this was refused. As to the employees, it is gratifying to be able to state that with hardly a single exception, they cheerfully submitted, not only to an examination, but also to a searching inquiry into every detail of their lives.

We welcome this opportunity to express to Mr. Frederick L. Hoffman, of the Prudential Insurance Company, our thanks for suggestions in making up the inquiry blanks; for assistance furnished in the analysis of the data and for the great interest he has shown throughout in the study.

To Dr. Kaufman, of the Phipps Institute Staff, we wish also to express our thanks for assistance rendered in making some of the physical examinations, and to Mr. Carol Aronovici for the preparation of charts.

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FACTORS AFFECTING THE HEALTH OF GARMENT MAKERS.

CHAPTER I.

INTRODUCTION.

SOURCES OF INFORMATION.—SCOPE AND METHOD.

The present contribution is an attempt to picture the industrial life of workers engaged in an occupation in which deterioration in health is a gradual process, as distinguished from occupations in which the chief danger is mineral poisoning or a traumatic accident. During the past few years there has been a great deal of work done having for its object the minimizing of accidents. In many instances the necessity of protecting working-people in this regard has been made obligatory by law.

In addition a number of investigations have been made, some under the auspices of the government, others by unofficial organizations, as to the condition of factories and working-places in general. This, too, has had a good effect in improving many existing evils, although the ideal is very far from having been reached. As a result of these studies made regarding industrial hygiene, and which have been for the most part inaugurated by the sociologist, the subject is becoming more and more important from the purely medical aspect.

Large business concerns are beginning also to appreciate the importance not only of maintaining the health of their employees, but of rejecting those who are physically unfit.

The major portion of our knowledge regarding the effect of certain occupations is based on mortality returns. Thus if a certain number of deaths from a given disease is recorded as being so many per thousand, and this is in excess of the general death-rate per thousand, it is assumed that this particular occupation exerts a harmful effect on the worker.

In some instances this conclusion admits of no doubt. In others—and this includes a large number of occupations—there are so many contributing factors outside of the employment itself that the occupation can be responsible only partially.

Another defect in our present knowledge regarding the effect of a given employment on the health of the worker lies in the fact that no distinction is made as to the exact nature of work done. Almost invariably the employ-

ment is put down under a general heading, as, for instance, potter, hatter, tailor, etc. The use of such a comprehensive term should be avoided, if possible, as each of these occupations has many departments, between several of which no common characteristic can be said to exist. Thus in the pottery industry there is no relationship between the making of articles from potters' clay and their ornamentation by painting and gilding. Among hatters there is a wide difference in the character of the work performed in preparing the felt and the molding of it into shape: in the former instance dust is a factor to be reckoned with; in the latter, the work is done in a room saturated with steam. In the garment-making industry there are seven or eight different trade processes, several of which tend to exert a different effect on the workers.

The following illustration will serve to indicate one of the weaknesses of mortality statistics as furnishing a reliable criterion as to the exact effect of an occupation. The manufacture of hats has been classed among the dusty trades, and one in which the mortality from tuberculosis is unusually high. This has been ascribed to the exposure of the worker to organic dust. It is, therefore, interesting to note that the majority of the hatters who have visited the Phipps Institute Dispensary have been employed in the molding-room, and as far removed as possible from dust. And other instances might be cited to show that what seems to be the factor at fault really plays no part at all.

Then, too, the tendency in the past has been to study the effect of a given industry from the viewpoint of the occupation itself. While it is true that there has been an appreciation of the fact that in many occupations the home surroundings and habits of the work-people, poverty, age, and sex played a part in the deterioration of health, little or no attempt has been made to correlate these various factors.

It was a realization of these facts that led to the present study, the object of which has been to obtain as complete a picture as possible of a representative group of garment-workers. Not only was the working-place to be investigated, but also the worker, and as regards the latter, every effort was made to obtain every possible piece of information that would throw any light on the problem.

From the standpoint of preventive medicine, a clear definition as to what diseases should be called occupational is not essential. Preventive medicine concerns itself equally with the ill effects upon the health of workers, whether these effects result from certain industrial poisons or from certain entirely avoidable unsanitary conditions. In fact, from the standpoint of the conservation of the health of the worker, the alleviation of the condi-

tions which do not cause specific diseases, but which have as their inevitable consequence the diminished bodily resistance, with greatly increased susceptibility to disease of all kinds, is of even greater importance than the dealing with the causes of specific industrial diseases—more important because it affects greater numbers. The number of workers employed in trades recognized as dangerous is but a small fraction of the vast number who are employed in the enormous variety of industries which in themselves are innocuous, but which undermine the health of the operators by the entirely avoidable unsanitary conditions under which they work, and the standards of production from the point of view of speed that prevail in certain industries.

SOURCES OF INFORMATION.

It should be possible to meet the first requirement in a study of the mortality and morbidity rates of persons employed in the clothing industry from the experience data of—

- (A) 1. Ordinary and industrial life-insurance companies.
- 2. Workmen's sickness insurance funds.
- 3. Fraternal insurance societies.
- 4. Accident insurance companies.
- 5. Local and national census reports on occupational mortality.

The reports of insurance companies and fraternal societies, failing to tabulate their morbidity and mortality experience data according to occupations, a study of several hundred records of representative companies was made and proved the inaccessibility of these data, at least for the purposes of this study.

Even the mutual benefit societies to be found in a few of the factories investigated kept no records of the sickness represented among their beneficiaries, but only of the period and the amount paid out. With an adequate system of record keeping, this source of information, properly organized, should prove invaluable in a study of the health aspects or morbidity experience of a given industry. The records of The Workmen's Circle, a fraternal organization representing the largest organized group of garment workers in America, were, with the exception of the tuberculosis sanatorium, which is tabulated separately, practically valueless.

The second source of information should be from the experience of agencies dealing directly with sickness and its prevention.

- (B) 1. The department of health.
- 2. Departments of vital statistics.
- 3. Hospitals and dispensaries.
- 4. Tuberculosis sanatoria.

The United States is exceptional among the countries of the civilized world in that there is no national system of vital statistics.

The chief burden of filing certificates of death is imposed upon the undertaker, and it is hardly to be expected that, since no provision for fees has been made for them, as in the case of physicians and midwives in certain districts, the sense of responsibility and proper appreciation of the data provided will obtain.

The certificates of death constitute the basic schedule for the collection of mortality statistics, and upon the uniformity and precision with which the several items are filled out depends largely the comparability of the resulting data.

Up to 1910 the occupation was given no space in the death records used in Philadelphia, and even in the recently developed register the space invariably has been left open.

The importance of recording this information in available form has been recognized recently, and a new card-punching machine has been installed in the Department of Vital Statistics. This promises in the future to make this information readily accessible.

In the Department of Medical Inspection, moreover, but scant attention, up to the first of this year, was paid to the proper recording of the occupations in the tuberculosis report cards, and in the annual reports no classification of occupations or industries was made. In the recently developed records, however, this point has been adjusted and promises to obviate the present difficulty by establishing a source of comparative data.

The same situation is to be found in hospitals and dispensaries, and even where the occupation has been noted, it is usually too inaccurate to be of any value.

It must be remembered that, with the exception of phosphorus, lead, and mercury poisoning, few investigations of value have been made in this country into the vast question of industrial poisoning and occupational disease. That careful study carried out by competent authorities is urgently needed can be seen from the long list of physical defects to be found every day in our industries.

In England, where reports of certain occupations are compulsory, it is possible to secure, for example, reliable data as to the number of cases of lead poisoning.

The same facilities are afforded by the statistics of the "German Industrial Insurance Institutes," which furnish not only the number of deaths from various causes, but also the number of cases treated, together with the age period and duration of the disease. Similar facts should be collected

in this country. This is all the more important when it is remembered that, even with the most complete statistics, it is extremely difficult to determine all the factors which influence the health and longevity of operatives.

Any initial study, therefore, undertaken in this country, purporting to establish this point, must bear the mark of the limitations already referred to.

This emphasizes the fact that not sufficient attention is given in medical schools to the effect of occupation on health. While the student is taught to inquire as to the occupation of the patient, the information is recorded, as a rule, in such a general way as to be useless. True, it cannot be expected that physicians should be acquainted with the infinite complexity of industrial processes, yet the comparatively small amount of time that would be required to obtain more detailed information as to the patient's occupation would fully repay them.

Judging from the English statistics of illness, we must conclude that at all times in the United States about 3,000,000 persons are seriously ill, of whom about 500,000 are consumptives. Fully half of this illness is preventable. The lengthening and strengthening of life can be secured through medical investigation and practice, school and factory hygiene, restriction of labor of women and children, the education of the public in both public and private hygiene, and through improving the efficiency of our municipal, state, and national health service.

It is only recently that all the factors influencing health have been considered in relation to the individual, and, as far as we know, the Phipps Institute was the first to appreciate the importance of these data, recording complete information concerning the living and housing conditions and work process of each patient.

SCOPE AND METHOD.

This study includes nearly 1000 workers examined indiscriminately while at work. Of these, 743 were studied intensively—402 males and 341 females. It seemed best, in order to insure a representative group of workers throughout the city, to use the factory as the focal point, and for this purpose three distinct types were selected, namely, the modern standardized factory, showing the best conditions; the contracting factory, where average conditions prevail, and the sweat-shop, or lowest grade of factory, showing the worst conditions.

The places of employment of these workers were studied separately, with a view to ascertaining, in so far as possible, each factor and its bearing upon the health of the individual.

One of the most important factors in determining the physical conditions of workers as related to their occupation is to be found in the occupational history of the individual. The mere presence of an individual in a particular occupation, and the facts relating to his physical condition as revealed by a careful medical examination, are not conclusive proof of the influence of that occupation upon the physique, even though all other conditions surrounding the worker remain the same. Special emphasis was, therefore, placed upon the trade history of each worker.

A valuable contribution to the health history of industrial workers will eventually be derived from the records of school medical inspection, but this system is not, at the present time, far enough developed to contribute toward the physical histories of industrial workers.

Housing workers, on the other hand, have been devoting themselves to the structural conditions of buildings, but have failed to give us any basis upon which the effect of bad housing upon health could be reduced to measurable terms. In our own inquiry, we have made careful studies of the housing and living environment of all the workers examined, and these conditions have been related to the physical conditions of the workers.

As it has been frequently alleged that the factories with low sanitary standards also pay the lowest wages, and as the wage determines standards of living and health, our inquiry was amplified by a wage study according to trade process and character of factory.

Whether the evidence we have deduced in support of our conclusion is sufficient to stand the test of statistical verification along broader lines cannot be stated. The co-ordination of the factors we have endeavored to use, however, seems to us a fair basis upon which to judge the effects of trade processes upon health.

CHAPTER II.

RISE OF THE PROBLEM.

BUSINESS ORGANIZATION.—SMALL WORKSHOP.—SWEAT-SHOPS.—HOME WORKERS.

While in England the early victims of the sweating system were mainly English people, in the United States, and even in London at the present time, the immigrant population furnishes the vast majority of sweat-shop workers. In New York city the tailor trade was originally carried on by the English and Scotch, but about 1850 the Irish began to appear, and a little later the trade was taken up by the Germans. The sweating system practically began, however, in 1885, following the enormous immigration of the years immediately preceding. The Hungarian, German, and Austrian Jews had entered the trade as early as 1873, and soon afterward the Russian and Polish Jews appeared. By 1890 the Jews had gained entire control of the clothing industry in New York. The price of labor had fallen greatly, and a fierce competition reigned in all the larger cities of the United States, including New York, Boston, Baltimore, Philadelphia, and Chicago. In the same year the Italians entered the clothing trade in New York. Their entrance into the field reduced prices even further, and in addition they contributed the problem of home work.

Thus the clothing industry seems to have been the first resource of each of the alien races in turn, the more recent driving out the older immigrants, and all apparently using the sweat-shop system merely as a stepping-stone.

Passing over the element of race, there are traceable in the development of the clothing industry in this country three distinct stages: First, there was the journeyman tailor, a skilled mechanic who made up the entire garment himself, and who worked under fairly good conditions. The journeyman tailor has continued to perform a great part of the custom work, but his condition has steadily deteriorated, owing to the pressure of competition.

The second stage was the home shop, with division of labor, and for this, as for all subsequent developments, the large and increasing demand for ready-made clothing is largely responsible. While in 1870 probably less than 25 per cent. of the clothing manufactured in this country was ready made, in 1890 it was 60 per cent., and the proportion is considerably higher now.

An important factor in the supremacy of New York in the clothing business has been the prevalence there of the third method of production—the “task” system. Under this system the subdivision of labor and the economy of expert skill are carried to their extreme, and here the Jew, owing to his willingness to change his method of production, to use machinery, and to drive himself to the limit of exhaustion, has reigned supreme. The system originated about 1877, and practically took the place of the journeyman tailor in the coat-making trade.

It is an erroneous idea to suppose that sweat-shop clothing is necessarily poor in quality and manufactured under unfavorable conditions. On the contrary, overalls and working-men’s garments are usually manufactured in large factories under good conditions, while some of the worst features of the trade are to be found in the custom trade and in the manufacture of expensive garments. It was again and again stated before the Industrial Commission that no man in buying a custom-made suit of the best and most fashionable tailor could have any assurance that it was not made in a sweat-shop. The same thing may be said of all classes of women’s ready-made clothing.

With a few possible exceptions, work is more irregular in the clothing trade than in almost any other occupation. Months of feverish activity are supplemented by periodic unemployment, due to the seasonal character of the work. The rush periods begin in the fall, about the middle of August, and each period lasts from three to four months, with the uncertainty of work increasing in inverse ratio to the size of the shop.

As yet the method of lengthening the seasons of employment has been undertaken by few manufacturers. It is interesting to hear the uninitiated discuss the “marvelous organization of modern industries.” He need only inquire into the methods of steadying the seasons in almost any trade where wearing apparel is manufactured to discover proof of a most lamentable lack of efficient organization. So few are the efforts made in this direction that it becomes obvious business conditions have not compelled manufacturers to give sufficient attention to this problem. It would seem to be not so difficult to secure workers in the busy season as to compel manufacturers to devise means of prolonging their employment through twelve months.

BUSINESS ORGANIZATION.

For a better understanding of the facts relating to working conditions and their effect upon the health of employees a brief sketch of the business organization of this industry is here given:

To a great extent the various steps in the course of the manufacture of

men's clothing are attended to by firms which make a special business of one phase or the other of the general industry. Few firms carry on the entire process of manufacture from the purchase of the material to the sale of the garments to the consumer. The most common type of manufacturer buys his cloth and trimming either directly from the factory or from a jobber and has them cut on his own premises.

The sponging is done on the premises when his business is extensive, otherwise he sends the cloth out to a firm that makes a specialty of sponging. When the cloth, lining, and trimming have been cut and arranged in lots and bundles, the contractor is called in.

The contractor undertakes the work of actually making up the garments. Generally he devotes himself to the making of one part of the garment only, as the coat, pants, or vest.

These differences in business organizations are not without their effect on labor. In the first place, the "inside shop," or the type of factory manufacturing the entire garment upon the premises, means factory system, with regular hours, prompt and regular payment of wages, workshops built for this purpose, and in consequence a conforming to high standards in sanitation.

On the other hand, while in these shops the factory system reaches the highest development, for the most part a high degree of division of labor obtains, which confines the worker within a limited and recurring process.

There is here scope for the employment of workers possessed of less general all-round skill. The "inside shop" is likely also to use the contract shop as an evener, receiving excess work, so that in slack periods he suffers first. This means, of course, steadier employment for those engaged in the inside shops.

The concentration of the industry in the down-town or congested section of the city is primarily due to the dependence of the industry on foreign labor and its proximity to sources of supply.

The contractor, on the other hand, has a vital interest in his shop, and gives it the utmost supervision, which is not difficult in a small factory. He takes in learners and gets their labor cheap. His position differs from the foreman of an inside shop in that his income is not fixed, but is dependent on output and cheaper cost of production. Also, he is himself willing to work hard and long, demanding the same of his employees. Working for a number of wholesalers, he can have steadier work than a small inside shop, and as he is personally acquainted with his workers, he can reduce their number in slack periods without disrupting his shop, or get them back again when work is plentiful.

The "inside shop," when very large and conducted in connection with a number of contractors, can frequently manufacture more cheaply. Moreover, it can keep its own employees continuously at work by leaving the contractor without work in dull periods. Notwithstanding the fact that these shops, as a rule, are superior places of work, the contract shop is not infrequently preferred by the workers for personal reasons. The absence of discipline and personal contact between "boss" and workers are the reasons given. In the inside shop a stricter discipline is observed throughout, smoking is prohibited, regularity and promptness are required, and this interference with freedom is resented by certain classes of workers. As one worker put it: "I don't like to have some one over me watching me every time I get up. I want to be free to move around as I please."

From the point of view of labor, the disadvantages of the contract shops are, in part, poor and unsanitary workshops, long hours, and the small scale on which they operate. In order to save rent, the contractor often locates in a building, or part of a building, not originally intended, and, hence often unsuited, for shop purposes. He is tempted to crowd in order to save room and rent, and his shop lacks necessary sanitary facilities, adequate ventilation, and the ordinary requirements for cleanliness.

These shops are scattered and numerous and so lose the incentive for high standards resulting from regular factory inspection. There are some contract shops, however, that are model establishments from the standpoint of sanitary conditions. In Germany and Sweden high standards are successfully maintained in the small workshops.

SMALL WORKSHOP.

In its earlier form the "sweating system" was practically identical with the subcontract system, the difference between the price paid the contractor and the price paid the subcontractor or actual worker being considered as "sweated" from the normal earnings of the latter. Of late years, however, the tendency has been to reduce the cost by eliminating the subcontractor, without in any way changing the labor conditions.

The following definition of the sweating system is given by Mr. Henry White, formerly general secretary of the United Garment Workers of America: "The term 'sweating system' has a general meaning, but is specifically used to describe a condition of labor in which a maximum amount of work in a given time is performed for a minimum wage, and in which the ordinary rules of health and comfort are disregarded." (White: "The Sweating System," Bulletin of the United States Department of Labor No. 4, p. 360.)

This definition brings out the three characteristic evils of the sweating system: (a) Low wages; (b) long hours, and (c) unsanitary workshops. In the last-named evil is implied a fourth—the danger to the health of the worker laboring under these conditions, and to the consumer from the use of sweat-shop goods. The final process in the manufacture of clothing in the sweat-shop is the removal of the grease, dirt, and vermin that have collected, but the less obvious accumulation of possible disease germs generally passes unnoticed.

The causes of the sweating evil are somewhat complex and even obscure. It has been found, moreover, that it is a serious mistake to regard the middleman or "sweater" as himself the cause, or even a contributing cause, of the evil. The typical sweater is little, if any, better off than his employees, and is himself a victim of the system. Another view is that the ultimate cause of the system is the weakening of the race through the bad sanitary and hygienic conditions prevalent in cities, which render the individual inefficient and incapable of competition with those who have lived under better conditions. This idea, however, fails to account for the fact that in the United States thousands of victims of the sweating system come from the agricultural communities of Europe, and for the further fact that only a small proportion of the children of sweat-shop workers are themselves found in sweat-shops. Nevertheless a leading cause of the sweating system is undoubtedly the lack of competitive ability on the part of large numbers of wage-earners—a lack, however, which is principally due to ignorance, absence of industrial training, and a low standard of life.

A second leading cause of the sweating system is the fact that in certain industries the general rule that the big shop can produce more cheaply than the small one does not hold good. The fact is, of course, largely dependent upon the former cause, for the small shop holds its supremacy only by reason of the oversupply of cheap and needy labor.

The large establishment, moreover, is far more subject to legislative supervision than the small, which maintains its economic position by driving down wages to the subsistence point, and below, by indefinitely prolonging hours and by wholly neglecting sanitary conditions. The large use of woman's labor and the small amount of skill required in this highly specialized industry also contribute to the success of the small shops. The foreigner, moreover, ignorant of the English language, is at the mercy of some small contractor, probably of his own nationality, from whom he learns a single process of manufacture and by whom he is carefully guarded from the knowledge of any means of escape.

Another factor which has contributed largely to the success of the small

shop is the seasonal character of the trade. Outside of the two rush seasons of three or four months each, there is little work. If the manufacturer maintained his own establishment, this fact would be a serious inconvenience and loss to him, while it would be hardly possible for him to increase his working capacity rapidly enough during the rush seasons. By the contract system, however, he throws all the losses of the dull period upon the employees. Under it he can wait until the last moment to buy his goods, and can then distribute them broadcast to be made up in the minimum time. By means of this system a mass of unskilled labor is effectively organized for work when wanted, and is cast adrift readily when the work is over.

Aside from the three evils which we have seen to be inseparably connected with sweating, the main features of the system are, generally, minute subdivision of labor and the contract system, with a fixed piece price or wage.

It is interesting to note, in passing, that this type of workshop corresponds more nearly to the conditions under which that group of workers following this same trade in Russia have labored than any other, with the additional custom there, and formerly in this country, of boarding the workers in the home shop. Thus they become an integral part of the employer's family life, assuming many responsibilities quite apart from the trade itself. The standard of life is very low, the workroom being used for sleeping quarters and all other needs and purposes.

A common variety of "sweating" is carried on in workrooms used especially for that purpose. These are connected with the living rooms of the "sweater," in buildings which are not used for residential purposes. They have been found in rear tenements and over barns which have been condemned as unfit for human habitations. The machines in these shops are run by electricity, although occasionally pressing irons are found heated in ovens. As the size of the shops and the number of employees increase, the "sweater" becomes more and more an overseer, driving the laborers to the greatest possible speed for the longest possible hours. Although wages are still by the piece, only rapid work and long hours will enable the work people to hold their places in these shops, for the burden of expense which the sweater bears is comparatively heavy, and he is obliged by competition to turn out the maximum amount of work with a given equipment.

HOME WORKERS.

The question of home work has not only had much attention in this country, but it has for a long time been recognized as an evil in many European countries.

Sir Thomas Oliver, in "Dangerous Trades," page 98, cites the following conclusions as regards home work: "Apart from the perils of starvation wages and excessive hours, one of the main facts brought out by recent investigations into home work is the grave danger to the health of both the worker and the community at large arising from the making of garments in disease-infected and otherwise unsanitary homes, and public opinion has been gradually ripening to the conclusion that legal restrictions of some kind are necessary to protect public health. Furthermore, it is beginning to be recognized that the application to outwork of the laws that regulate labor in the factory is a perfectly reasonable and logical extension, as outwork is practically an extension of factory work, or it may be more properly described as its 'backwash.' Outworkers are employed mainly in the surplusage of factory workers—the unskilled and poorly paid work that the workshop rejects or that the pressure of a big order prevents her wholly overtaking. The low degree of skill required for the most part, and the consequent low earnings, have their inevitable result in placing the section of the industry in the hands of the very class of workers whose conditions most need supervision and control."

In recent investigations, as well as in earlier investigations in America and abroad, the testimony shows that whenever home work exists, much of it is done in the midst of unhealthy surroundings.

Home finishing is not confined to a cheap grade of garments, or to such as are made by contractors. It is resorted to by the makers of all grades of clothing, by leading manufacturers who maintain large inside shops, as well as by the small contractors.

Formerly almost all finishing was done in the homes, but the "inside shop" has now developed sufficiently to bring a large proportion of, but not all, the work within the shop or factory. This development has not, however, kept pace with the great growth of the clothing industry which would make it appear, as a consequence, that the actual amount of home work is increasing.

Among the Italians and several Hebrews this form of labor was carried on in the homes of a large number of the factory workers studied in this inquiry by other members of the family.

For a representative group from the sociological point of view, however, 20 home workers without factory hours were selected for intensive study.

The clothing industry is considered the largest field for home work connected with the sewing trades. The women engaged in home work are usually of foreign birth, Italians predominating, who have practically a

monopoly of home work. The married Italian women take up this work upon arrival in America, usually without any previous experience in the sewing trades, and continue it for years.

The evils begin in the small loft, from which are carried on the heads, backs, and arms of women and children heavy bundles of clothing and so transported through the streets. These usually weigh more than the children who carry them, and not infrequently the physical condition of women is such that the weight is a positive injury.

The influence of home work upon children of school age was investigated from the point of view of school attendance, and unlike the experience of New York, was found negligible.

In none of the schools located in the districts where garment workers resided, both home and factory workers, was any influence to be traced to school attendance and scholarship.

The Department of Health reports 2500 home workers (not classified) in this city to whom work permits have been issued; while this permit is required by the department for each worker, the laxity of manufacturers in demanding them is responsible for dozens of infractions of this law.

HOME WORK—CONTAGION.

That the United States Government recognizes the danger of contagion through home manufacturing is set forth in the following, from a review of Professor Commons' testimony before the Industrial Commission (Report of Industrial Commission, 1901, vol. xx, page 31):

"While neither the Federal Government nor any State Government has undertaken to abolish tenement home work when the work is sold to private purchasers, yet where the Federal Government is itself a purchaser of clothing, it has undertaken to establish this condition. Since the Spanish-American War, when it seemed to be clearly demonstrated that the contagion of measles and other diseases in the army was owing directly to tenement house manufacture, the War Department has inserted in its contracts with the manufacturers of military garments that all work must be done in a regularly organized factory, and no part of the work shall be sublet to contractors.

"In several states clothing for the National Guard is usually purchased from the War Department, and is, therefore, protected by the specification of that department, but in those states where clothing is purchased by the state authorities there exist at present but few restrictions.



FIG. 1.—Represents a perfectly dark hallway. The building from which this was taken contained ten small shops. The shops, being on the outside, were well lighted. The dark passageways and stairs are a distinct menace in case of fire.

HOURS OF LABOR.

Because of the long periods of idleness, these workers make the most of the busy season when it comes, and by taking as many garments as can be secured, work unlimited hours and strain to the utmost to complete their tasks. There were instances where women said they worked from 6 or 7 A. M. to 9, 10, or 11 at night.

Generally speaking, many of the home workers are past middle age, and their husbands have reached the age when their earning power decreases rapidly. A considerable number, therefore, are unemployed during the entire year, or employed for only a small portion of the year.

This fact, taken into consideration with the yearly earnings for the majority of those men, indicates the inability of most of them to advance beyond a certain stage in their earning power.

Another factor is that the Italians, who are in the majority in this class, being unskilled in American methods of production, engage largely in outdoor employment. They work chiefly as common laborers, which is poorly paid at best and very irregular.

In Philadelphia, because of the delivery system employed to some extent by the manufacturers, a higher grade of home workers is employed. The home workers here are on a firmer economic footing, living in better homes, some owning their houses, and do not appear to be in great financial need.

CONCLUSION—HOME WORK.

It is not claimed that all home finishing is done under unsanitary or revolting conditions; yet the fact that it can be done under such conditions, and that much of it is so done, forces the conclusion that such a method of manufacture should be abolished in the interest of public health.

The Committee on Manufactures of the House of Representatives, in its report on the sweating system (Report No. 2309), gave as one reason to confining their labors to the clothing industry the fact that the dangers to the public welfare were more serious in that than in other sweated industries.

The conditions under which work by, say, 1000 people, is done in a factory, can be inspected frequently, but to attempt to visit that number of home finishers with any effect is useless.

CHAPTER III.

CONDITION OF FACTORIES STUDIED.

FIRE RISK.—VENTILATION AND LIGHT.—DUST.—WASH AND DRESSING ROOMS.—TOILET FACILITIES.—CUSPIDORS.—DANGEROUS MACHINERY.—WASTE RECEPTACLES.

Taking up the various factors which may have a bearing on the relation of the physical condition of the workers to their occupation, we have to consider first the work place itself.

As this investigation was restricted to shops in which the garments are made up, no special attention was paid to distribution by sex, but all the workers found therein were examined indiscriminately. This fact will explain, for example, why it is that, contrary to the results reported in the United States Government Report on "Men's Ready Made Clothing" (vol. 2, page 16), a higher percentage of men than of women was found employed in this industry.

To establish the relationship existing between the sanitary condition of the place of employment and the physical condition of the worker was an object of first importance in this study. It should be borne in mind, however, that the workers' frequent shift from factory to factory renders an accurate estimate of the influence of working conditions upon the individual in the course of a number of years impossible.

This investigation covered 43 factories, employing a total of 2098 workers. The most significant facts in connection with the inquiry into the sanitary conditions of the factories are to be found in the frequency of unhygienic conditions and the variety of defects and deficiencies which many of the factories presented.

The following table shows the distribution of defects:

With 10 subnormal conditions	6
" 11 " "	13
" 12 " "	9
" 13 " "	3
" 14 " "	1
" 9 " "	2
" 4 " "	1
" 3 " "	3
" 5 " "	1
" 7 " "	2
" 8 " "	1
" 0 " "	1

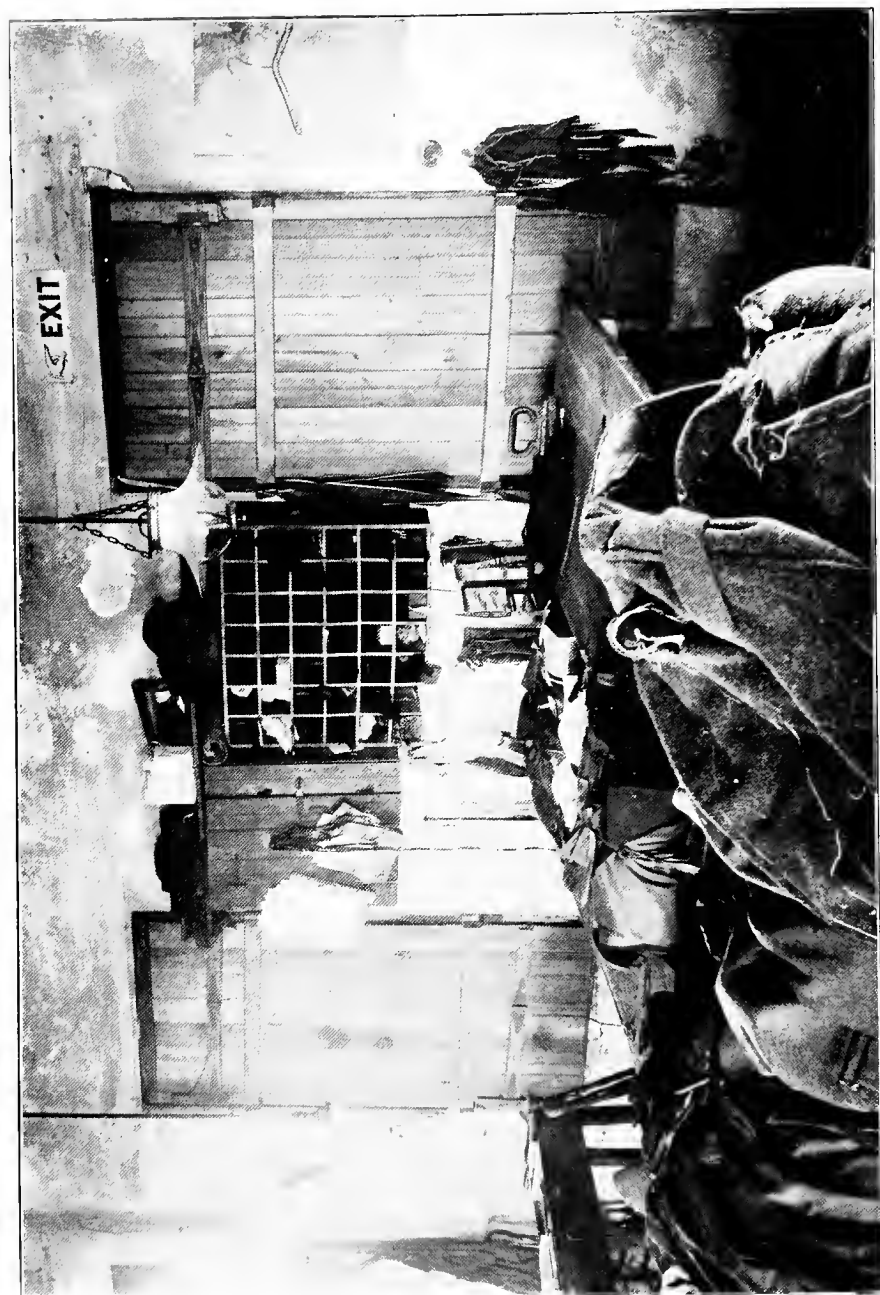


FIG. 2.—Shows the exit to the fire-escape barred, and furthermore obstructed by a work-table and piles of clothing.

DEFECTS OF 43 FACTORIES INVESTIGATED

— ACCORDING TO NUMBER OF WORKERS AFFECTED —

Whole No. of Workers Full Circle O
No. Affected by Defects—Sector—

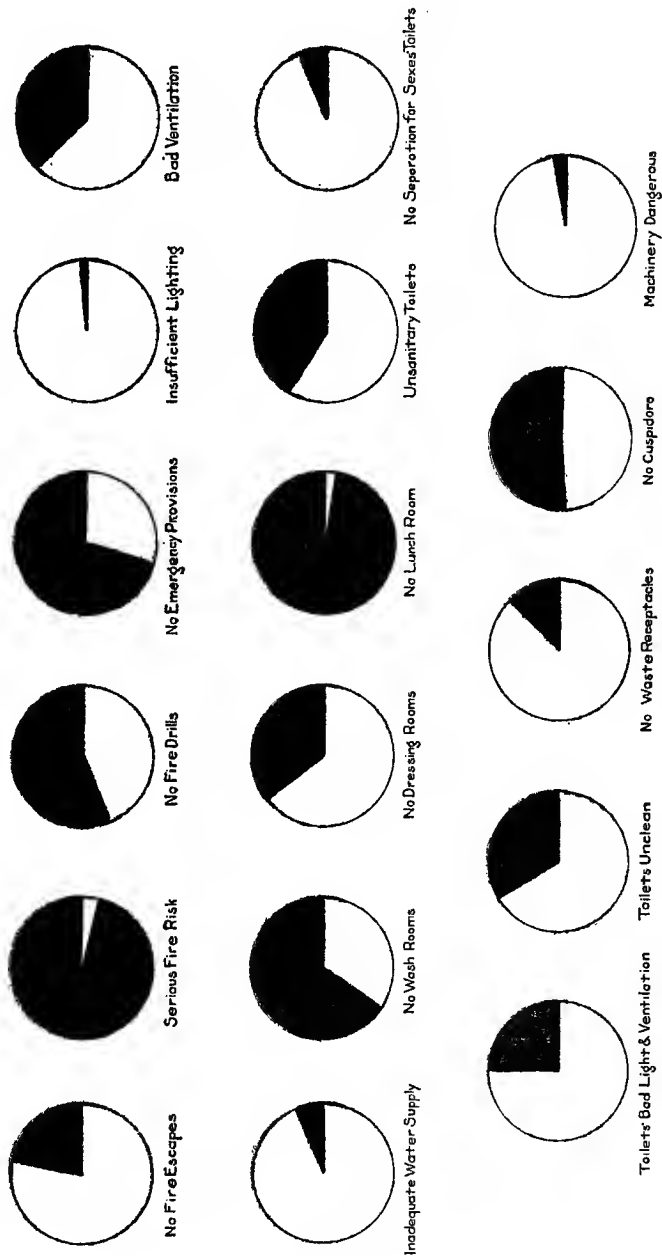


CHART I.

These figures indicate that in the 43 factories examined, 422 defects were found, or an average of nearly 10 conditions prejudicial to health and safety per factory.

In this connection, however, it is to be borne in mind that the majority of the places we had access to were of the poorer type. Inasmuch as the study was made without the official authority of either the city or state departments of health, our entrance into a shop or factory was dependent on the willingness of the owner to have an inspection made. It is interesting to note that we had little trouble in gaining the consent of the smaller factory owners, and that absolute refusal to permit a survey was encountered in several of the very best type of shops. As to the working-people themselves, it was exceptional to encounter one who did not cheerfully submit to an examination and later to an exhaustive inquiry as to his or her industrial life.

An analysis of the defects noted is contained in the following table:

DEFECTS	NUMBER OF FACORIES	NUMBER OF WORKERS	PER CENT. OF TOTAL WORKERS
No fire escape provision	20	480	22.2
Serious fire risk	41	2062	94.9
No fire drills	39	1221	56.1
No emergency provisions	30	1515	69.6
Insufficient lighting	1	40	1.8
Bad ventilation	19	800	36.8
Inadequate water supply	4	147	7.5
No wash rooms	39	1313	64.2
No dressing rooms	34	771	35.5
No lunch rooms	42	2013	97.3
Unsanitary toilets	34	877	40.3
No separation for sexes' toilets	8	139	6.4
Toilets bad light and ventilation	23	534	24.6
Toilets not clean	34	705	32.5
Waste receptacles not furnished	20	302	13.9
No cuspidors	41	1123	51.6
Machinery dangerous	2	80	3.6

Chart I shows in a graphic manner the factory defects.

In most instances there was no question as to the presence or absence of the defects noted, as they were perfectly obvious. The only factor involving the personal equation was that concerning ventilation, and even in regard to this we feel that our observation was at least approximately correct.

FIRE RISK.

The safety of workers from the point of view of fire risk appears, then, to be seriously endangered by the conditions found to prevail in the estab-



FIG. 3.—Shows a fire-escape lowered into a manure pit; the lower end is further obstructed by an abandoned wagon filled with junk. When first seen, the fire-escape was elevated. Following a report of the condition, the escape was lowered, but nothing was done in regard to the other defects.

lishments examined. While it appears that only 22.2 per cent. of the workers were employed in places without adequate fire-escapes, the figures relating to the presence of fire risks due to obstructed exits, prevalence of smoking, locked doors, presence of waste and accumulation of débris, etc., indicate that 2062, or 94.9 per cent., of the workers were employed in the establishments presenting conditions of serious fire risks.

In view of the recent fires occurring in clothing manufactories in New York state, and the resulting overwhelming loss of life, it is to be hoped that these figures will bear special significance in pointing out the need for prevention in Pennsylvania.

If to the figures relating to lack of fire-escapes and fire risk we add the facts that 30 factories studied, employing 1515, or 69.6 per cent., of the workers, were without emergency provisions, and that 39 factories, with 1221 workers, or 56.1 per cent., of the total, no fire drills were held, the problem of fire prevention becomes alarmingly serious.

If the same proportion of fire risks exists throughout the entire industry in this city, the risk of life involved may be said to be a matter for immediate action on the part of the local authorities and the State Department of Labor.

While fire risks *per se* cannot be considered an element influencing health, invariably the conditions entailing fire risks arise from conditions of neglect and carelessness which in themselves represent a sanitary evil measurable in the reduction of air space, through the accumulation of storage, waste, etc., the accumulation and inhalation of dust, and the obstruction of windows and doors that might otherwise be used for ventilation.

VENTILATION AND LIGHT.

It has been shown that the air breathed by the employees in a factory or workshop can be kept pure in two ways: (1) By constantly renewing from outside all the air of the room in which work is carried on. (2) By removing impurities locally, or otherwise preventing them from ever mixing with the air breathed. The former process may be distinguished as general, and the latter as local, ventilation. As a general rule, dust and fumes can best be dealt with by local ventilation or by other means, whereas impurities due to the emanations from the employees and lights burning must be got rid of by general ventilation.

The practical difficulties confronting efforts at adequate ventilation in the case of sedentary occupation are frequently pointed out; but the objection on the part of employees to proper ventilation depends sometimes on the absence of proper heating arrangements during cold weather. This

often leads to further vitiation of the air through the lighting of gas burners for heating purposes during the day.

Unfortunately, very little material progress has been made, even by experts, to give enlightened employers and labor leaders definite standards of ventilation and methods of securing it. And while much progress has been made in factory sanitation, the evidence is entirely conclusive that present conditions affecting health and life in industry leave much to be desired.

In the matter of ventilation it was found that almost one-half (19) of the factories examined, employing a total of 800, or 36.8 per cent., of the workers, were insufficiently ventilated. While no instruments of precision were available for a scientific test of atmospheric conditions in these factories, the presence of impurities, such as carbon monoxide gas, and humidity was apparent to even a lay investigator. The defects found were due, for the most part, to indifference and ignorance, as well as to structural defects, such as low ceilings, stationary windows, etc.

No doubt was left in the mind of the investigator, however, as to the possibilities of improving the ventilation of such rooms without any change in the structural conditions.

Had we used instruments in the measurement of air changes and impurities, we would have had the task of fixing standards consistent with the conditions under which this industry is carried on.

The Department of Labor should prescribe a standard of sufficient ventilation for any class of factories or workshops, and that standard should be observed in all factories and workshops of that class.

In regard to the lighting facilities of the shops examined, it may be said that, with one exception, all the buildings in which the shops were located had ample window space and furnished sufficient light. During the winter months, however, artificial light is necessary, sometimes, during the greater part of the day. There is practically no attempt made to so arrange the lighting facilities that the workers will obtain the light under proper conditions. And the same may be said of the natural light. Insufficient or improper lighting undoubtedly has much to do with the occurrence of headaches and eye-strain.

DUST.

Dirt, rubbish, and a general appearance of dilapidation were characteristic of the poorer places. The amount of dust in the factories examined was variable in quantity. Dust produced by the trade itself cannot be considered, however, as being in sufficient quantity to greatly affect health. For the most part the dust was the accumulation of weeks and even

months, and such as might occur in any working-place, which was rarely, if ever, subjected to a regular cleaning. From an economic standpoint it would be to the interest of the manufacturer to insure cleanliness. During the process of manufacture the clothing lies about on the floor, and is being constantly trodden upon by the workers. In the manufacture of shirt-waists the shops are nearly always clean, and the garments, both incomplete and completed, are kept in boxes beside the workers. The reason for this is obvious. If white goods become soiled in the process of manufacture, an additional expense is incurred to have them laundered. There is no good reason why woolen garments should not be protected in the same way. On the one hand, the public would be protected against obtaining clothing which had been subjected to all kinds of unsanitary treatment, and, on the other, the manufacturer would be spared the expense of removing dirt and grease.

WASH AND DRESSING ROOMS.

As lunch rooms were provided in only one out of a total of the 43 factories examined, and as most of the workers take the noon meal at the work-table in the workrooms, the importance of wash-room facilities is apparent. It was found, however, that only four factories had such provisions, and that 13.13, or 64.3 per cent., of the workers were without such facilities.

The dressing room, as is well known, has the double function of giving privacy to the sexes, and when separate lockers are provided, renders the possibility of infection through the clothing negligible.

The use of separate clothing during working hours is a desideratum, and reduces the possibility of infection in the home to a minimum.

Notwithstanding the passage in this state of the Factory Act of 1909 and the Woman's Labor Bill in the 1913 Pennsylvania Legislature requiring the provision of dressing rooms, in most of the small shops where an attempt to comply with the letter of the law is made, the "room" is nothing more than a makeshift arrangement, partitioned off in one corner of the general workroom, inadequate as to space and unsatisfactory from every other standpoint. Thirty-four factories without such rooms, although representing a large proportion of the establishments examined, affected the comfort of a comparatively small number of workers—771, or 35.5 per cent. of the total.

These, however, were altogether in small shops, averaging 22 workers per factory.

The wash-room facilities, while not a necessity from the point of view of the sanitation of the factory, is an important factor in the promotion of personal hygiene. Our investigation showed that 37 out of a total of 43

factories had no wash-rooms, and that in these factories 1313 workers, or 64.2 per cent. of the total in the factories examined, were affected.

TOILET FACILITIES.

Pennsylvania for several years—since 1909—has had upon its statute books adequate legislation covering toilet requirements. In section 9 of the Woman's Bill, passed in the 1913 legislature, the following provision is made:

“Every person employing or permitting females to work in any establishment shall provide suitable wash- and dressing-rooms and water-closets, or privies, for their use, so located as to be accessible to such females. In any establishment in which males and females shall be employed or permitted to work, separate wash- and dressing-rooms and water-closets, or privies, shall be provided for each sex: and such wash- and dressing-rooms and water-closets, or privies, for each sex, shall be entirely separate from those provided for the other sex. The water-closets or privies provided for females shall be in the ratio of one for every twenty-five females employed or permitted to work. All water-closets or privies shall be properly lighted, and shall be separated from the rooms in which employees shall be permitted to work by partitions extending from floor to ceiling, and the compartments containing such water-closets or privies shall have sufficient direct outside ventilation, by window or other means. The entrances to the water-closets or privies shall be screened from the rooms in which employees work, and from the entrances to the water-closets or privies provided for the other sex, by screens or partitions at least six feet high. All water-closets or privies shall at all times be kept clean, sanitary, and free from all obscene writing or marking.”

The lack of standardization and enforcement of these laws, however, is responsible for conditions of insanitation and unspeakable neglect, seriously jeopardizing the health and comfort of the workers.

It is a matter of much concern that we find 34, or more than three-fourths of the factories, inadequately equipped in proper toilet facilities affecting 877, or 40.3 per cent., of the workers employed in the establishments examined.

The failure to provide separate toilets for the sexes constitutes a special hardship for the women.

In the eight factories where provision for separation of the sexes was not made, 139, or 6.4 per cent., of all the workers were affected.

The conditions of ventilation and lighting of toilets constitute the gravest of the many evils. More than one-half, or 23, of the factories had



A



B

FIG. 4.

A represents a long, narrow room with windows at either end. Artificial light needed during day.

B. Other end of room, showing a group of women workers. Note that women are compelled to sit on boxes instead of chairs. Absence of cloak-room indicated by coats and hats hanging along wall. As picture was taken by flash-light it does not indicate fact that women were doing fine needlework with inefficient lighting.

insufficiently lighted and poorly ventilated toilets, affecting 534, or 24.6 per cent., of the workers.

The merest essentials of cleanliness of toilets were neglected in 34 of the factories, surpassing even the most pessimistic expectations of the investigators. Almost one-third—705 of the workers, or 32.5 per cent.—were affected by these conditions.

CUSPIDORS.

The common practice of expectoration among male workers is well known. In only two of the larger factories was provision of cuspidors made to meet this condition, while in the remaining 41, with a working population of 1123, or 51.6 per cent., the situation received no attention.

DANGEROUS MACHINERY.

The facts brought out in the course of this inquiry relating to dangerously exposed machinery cannot be considered final, since the investigators' limited technical knowledge of machinery would make apparent to her only the most obvious dangers. Thus, in only two factories, involving serious risk to 80 workers, were conditions found to require immediate attention.

WASTE RECEPTACLES.

The provision of receptacles for waste is a necessity, not only as a preventive in dust accumulation, but also against fire.

In 20, or one-half, of the factories no such provisions were made. It is worthy of note, however, that while the number of factories failing such provisions is large, the number of persons employed in them was only 302, or 13.9 per cent. of the total.

The relation of structural and hygienic conditions of the factories to the health of employer and employees will be discussed under the separate heading of The Relation of Working Environment to Physical Condition, which was the subject of careful investigation and correlation.

CHAPTER IV.

RACIAL CHARACTERISTICS.

NATIONALITY.—CONJUGAL CONDITION.—LENGTH OF RESIDENCE IN THE UNITED STATES AND LENGTH OF TIME IN THE TRADE.—AGE AT BEGINNING WORK.

In estimating the effect of this particular trade on the health of the workers, one must not lose sight of certain racial peculiarities. In sketching the evolution of the garment-making industry, attention was called to the present-day supremacy of the Jews in the trade. It is not surprising, therefore, that the majority of the people studied by us were of this nationality.

The following table shows the percentage of each nationality among the 402 males and 341 females intensively studied:

NATIONALITY	PER CENT. MALES	PER CENT. FEMALES
German.....	0.99	0.29
Lithuanian.....	14.18	17.31
Italian.....	11.45	48.09
Spanish.....	..	0.29
Hebrew.....	73.38	33.73
Celtic.....	..	0.29
Total.....	100.00	100.00

These figures show very clearly the preponderance of Jews, especially among the males; next to the Hebrews, the Italian women are most numerous.

The effect of racial composition of workers upon shop organization is also interesting, since it results in a tendency to organize the shops along the lines of one race. This is especially true in the smaller and contract shops, where often every employee is of the same race, and even in the large factories the tendency is to recruit the employees from the same race as the foreman, with the broad exception of the general employment of Italian women.

There is no industry with which we are familiar in which race traits count for as much as in the garment-making trade. Composed as it is so



FIG. 5.—Represents corner of small room, 10 by 12, in which three pressers, four operators, three finishers, and one foreman worked. One presser had advanced tuberculosis of the lungs and expectorated in the corner near the oven used for heating irons. Floor unsafe and extremely filthy. Shop later condemned. Picture is of interest as it shows the type of oven formerly in use for heating pressing irons. These ovens have been almost entirely superseded by the gas-heated iron.



FIG. 6.—Illustrates the cluttered-up condition of the workshop floor. Finished and partly finished garments are scattered about the floor and are constantly being walked on by the workers. The floors are rarely, if ever, cleaned.

largely of Jews, this race has contributed not a little to the rise of certain evils of which probably the greatest is the so-called "speeding-up" process. Piece work, to some extent, has brought this about. Dependent as his wages are on the amount of his daily output, the worker goes at top speed, and the Jew, beyond all others, possesses the capacity to drive himself to the extreme limit of his endurance. He does this largely because of an ambition to better himself, and to accumulate sufficient means to start in business for himself; and while but relatively few reach the goal of their ambition, the effort costs many of them their health.

The Italians, on the other hand, work easily, and while many of the women work overtime in the home, they rarely make any effort to drive themselves at top speed, as does the Jew, and the same is true of the phlegmatic Lithuanians.

The following tables show the country of birth:

DISTRIBUTION OF 402 MALE EMPLOYEES BY COUNTRY OF BIRTH.

COUNTRY	*15-19	20-24	25-34	35-44	45+	TOTAL
Russia.....	45	43	85	70	45	288
Italy.....	12	10	12	5	3	42
United States.....	7	2	..	2	1	12
Austria.....	2	4	11	8	7	32
Hungary.....	..	..	2	2	2	6
Rumania.....	2	6	4	2	3	17
England.....	..	..	..	3	..	3
Germany.....	..	..	..	..	2	2
Total.....	68	65	114	92	63	402

* Under 15—3.

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY COUNTRY OF BIRTH.

COUNTRY	*15-19	20-24	25-34	35-44	45+	TOTAL
Russia.....	61	55	17	10	1	142
Italy.....	54	27	41	17	9	148
United States.....	27	5	1	..	..	33
Austria.....	1	1	..	..	..	2
Hungary.....	2	..	..	..	..	2
Rumania.....	2	4	..	1	1	8
England.....	2	..	..	1	..	3
Spain.....	1	..	..	..	..	1
France.....	1	..	..	..	..	1
Germany.....	..	..	..	1	..	1
Total.....	151	90	59	30	11	341

* Under 15—8.

CONJUGAL CONDITION.

The only noticeable fact in the following tables is that, among the males, 251 (62.4 per cent.) were married, while among the females 242 (73.9 per cent.) of 341 were single, and in addition 21 were widowed.

DISTRIBUTION OF 402 MALES BY CONJUGAL CONDITION.

CONDITION	15-19	20-24	25-34	35-44	45+	TOTAL
Single.....	68	44	24	8	2	146
Married.....	..	21	90	83	57	251
Widowed.....	..	..	..	1	4	5
Divorced.....	..	..	..	..	..	..
Total.....	68	65	114	92	63	402

DISTRIBUTION OF 341 FEMALES BY CONJUGAL CONDITION.

CONDITION	15-19	20-24	25-34	35-44	45+	TOTAL
Single.....	148	71	20	3	..	242
Married.....	3	17	34	17	5	76
Widowed.....	..	2	4	10	5	21
Divorced.....	..	..	1	..	1	2
Total.....	151	90	59	30	11	341

LENGTH OF RESIDENCE IN THE UNITED STATES AND LENGTH OF TIME IN THE TRADE.

Another factor which has considerable economic importance is the question of the experience of the employee. Workers in the garment-making trade are recruited almost exclusively from the newly arrived immigrants, who, as a rule, are without experience. Inasmuch as the work is finely subdivided and is readily learned, the employer is reasonably certain of being able to obtain, with little or no difficulty, an adequate number of workers. Because of the necessity of getting immediate employment, and because of his lack of familiarity with the work, the beginner works for a small wage.

That these workers are, for the most part, unskilled upon their arrival in this country is indicated in the following tables. These tables, which give the figures for the males, show how closely the trade life of the individual corresponds to the length of residence in the United States. The same fact is disclosed in the figures relating to the females.

At the age periods twenty to twenty-four and twenty-five to thirty-



FIG. 7.—Shows a dark and very filthy closet and a sink which furnished the only water-supply for the entire building. Picture taken after bad conditions were reported and evils remedied

four for both sexes the length of residence in the United States and the trade life are practically identical. Among the older workers the figures indicate that a few have had some experience in the home country.

DISTRIBUTION OF 402 MALE EMPLOYEES BY YEARS IN THE UNITED STATES.

YEARS	15-19	20-24	25-34	35-44	45+	TOTAL
Under 2.....	19	9	9	3	1	41
2-4.....	15	19	12	4	5	55
5-9.....	20	24	44	20	11	119
10-14.....	6	8	25	15	12	66
15-19.....	1	3	10	13	4	31
20-24.....	..	..	13	27	13	53
25 and over.....	..	..	1	8	16	25
Life*.....	7	2	..	2	1	12
Total.....	68	65	114	82	63	402
Average, Years.....	4	5	10	15	17	11
Months.....	10	11	7	2	2	1

* Excluded in finding average.

DISTRIBUTION OF 402 MALE EMPLOYEES BY YEARS OF TRADE LIFE.

YEARS	15-19	20-24	25-34	35-44	45+	TOTAL
Under 2.....	28	9	8	5	2	52
2-4.....	32	19	10	4	7	72
5-9.....	8	21	27	15	4	75
10-14.....	..	16	36	13	11	76
15-19.....	..	..	26	11	5	42
20-24.....	..	..	7	26	8	41
25-29.....	..	..	..	16	6	22
30-39.....	..	..	..	2	11	13
40 and over.....	..	..	..	..	9	9
Total.....	68	65	114	92	63	402
Average, Years.....	2	5	11	16	21	11
Months.....	4	11	..	5	10	10

* Those born in the United States are not included in finding averages.

COMPARISON OF YEARS IN UNITED STATES AND YEARS IN TRADE.

	15-19		20-24		25-34		35-44		45+		TOTAL	
	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.
Years in United States....	4	10	5	11	10	7	15	2	17	2	11	1
Years in trade.....	2	4	5	11	11	0	16	5	21	10	11	10

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY YEARS IN THE UNITED STATES.

YEARS	15-19	20-24	25-34	35-44	45+	TOTAL
Under 2	37	23	13	1	..	74
2-4	33	28	12	4	1	78
5-9	33	19	12	5	4	73
10-14	17	10	12	7	3	49
15-19	4	5	6	5	1	21
20-24 . . . . .	..	..	2	4	2	8
25+ . . . . .	..	..	1	4	..	5
Life*	27	5	1	..	..	33
Total	151	90	59	30	11	341
Average, Years	4	5	7	13	11	6
Months	10	1/2	6	10	4	4

* Excluded in finding average.

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY YEARS OF TRADE LIFE.

YEARS	15-19	20-24	25-34	35-44	45+	TOTAL
Under 2	8* 58	28	13	3	..	8 102
2-4	18 76	1 25	16	7	..	19 124
5-9	1 16	4 34	8	4	4	5 66
10-14	1	3	13	7	2	26
15-19 . . . . .	..	..	1 7	4	..	1 11
20-24 . . . . .	..	..	1	2	1	4
25-29 . . . . .	..	..	1	3	1	5
30-39 . . . . .	..	..	..	..	2	2
40+ . . . . .	..	..	..	..	1	1
Total	151	90	59	30	11	341
Average, Years	2	4	7	10	18	5
Months	8	7	7	10	1	3
Excluding years	2	4	7	10	18	5
Born in United States, months	10	5	5	10	1	5

* Figures in heavy type, those born in United States, numbering 33, are *not* included in the averages.

COMPARISON OF YEARS IN UNITED STATES AND YEARS IN TRADE.

	15-19		20-24		25-34		35-44		45+		TOTAL	
	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.
Years in United States	4	10	5	1/2	7	6	13	10	11	4	6	4
Years in trade	2	10	4	5	7	5	10	10	11	1	5	5

AGE AT STARTING TO WORK.

The age at which they started going to work is shown in the following tables. As is to be expected, the great majority enter the trade under the age of seventeen, namely, 89 per cent. of the males and 71.8 per cent. of the females.

DISTRIBUTION OF 402 MALE EMPLOYEES BY AGE AT GOING TO WORK.

YEARS	15-19	20-24	25-34	35-44	45+	Total
Under 12.....	..	11	11	3	4	29
12.....	5	6	6	10	4	31
13.....	11	10	19	12	5	57
14.....	29	11	26	20	6	92
15-17.....	23	27	46	30	23	149
18-20.....	..	..	..	15	18	33
21-24.....	..	..	4	1	1	6
25+.....	..	..	2	1	2	5
Total.....	68	65	114	92	63	402
Average, Years.....	14	13	14	15	16	14
Months.....	12	10	8	1	7	11

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY AGE AT GOING TO WORK.

YEARS	15-19	20-24	25-34	35-44	45+	Total
Under 12.....	3	3	3	2	1	12
12.....	6	5	6	1	..	18
13.....	19	10	4	2	1	36
14.....	60	9	1	3	1	74
15-17.....	57	27	12	6	3	105
18-20.....	6	22	9	1	..	38
21-24.....	..	14	8	1	1	24
25+.....	..	..	16	14	4	34
Total.....	151	90	59	30	11	341
Average, Years.....	14	16	19	24	26	17
Months.....	6	7	7	..	6	2

CHAPTER V.

PHYSICAL CONDITION OF EMPLOYEES.

HEALTH ON GOING TO WORK.—PRESENT PHYSICAL APPEARANCE.—HEIGHT, WEIGHT, AND CHEST MEASUREMENTS.—RELATION OF TRADE LIFE TO PRESENT PHYSICAL CONDITION.—MORBIDITY RATE AMONG GARMENT-MAKERS AS SHOWN BY HOSPITAL AND DISPENSARY EXPERIENCE.

HEALTH ON GOING TO WORK.

So far we were able to ascertain as the result of a painstaking history of each worker, the condition of health was almost universally good for the entire group of both males and females.

DISTRIBUTION OF 402 MALE EMPLOYEES BY HEALTH ON GOING TO WORK.

CONDITION	15-19	20-24	25-34	35-44	45+	TOTAL
Good.....	58	64	106	85	58	371
Fair.....	10	1	7	6	5	29
Poor.....	..	..	1	1	..	2
Total.....	68	65	114	92	63	402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY HEALTH ON GOING TO WORK.

CONDITION	15-19	20-24	25-34	35-44	45+	TOTAL
Good.....	143	87	56	28	11	325
Fair.....	7	3	2	1	..	13
Poor.....	1	..	1	1	..	3
Total.....	151	90	59	30	11	341

According to these tables, only 2 (0.49 per cent.) out of 402 male employees were in poor health on going to work; 29 (7.2 per cent.) were in fair health, while 371 (92.3 per cent.) were in good health.

Among the females only 3 (0.79 per cent.) were in poor health; 13 (3.81 per cent.) were in fair health, and 325 (95.2 per cent.) were in good health.

PRESENT PHYSICAL APPEARANCE.

DISTRIBUTION OF 402 MALE EMPLOYEES BY PRESENT PHYSICAL APPEARANCE.

PHYSICAL APPEARANCE	15-19	20-24	25-34	35-44	45+	TOTAL
Good.....	44	43	65	56	34	242
Fair.....	15	17	39	24	22	117
Poor.....	9	5	10	12	7	43
Total.....	68	65	114	92	63	402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY PRESENT PHYSICAL APPEARANCE.

PHYSICAL APPEARANCE	15-19	20-24	25-34	35-44	45+	TOTAL
Good.....	102	65	42	21	6	236
Fair.....	43	19	11	8	4	85
Poor.....	6	6	6	1	1	20
Total.....	151	90	59	30	11	341

An examination of the data recorded in the above tables gives a fair representation of the same people after a varying length of time in the industry. It will be noted that among the males, 242, or 60.2 per cent., are classed as representing a good appearance, as against 92.3 per cent. classed as healthy on entering the trade; 29.1 per cent. a fairly good appearance, as compared to 7.2 per cent. in fair health and 10.7 per cent. a poor appearance, as compared to 0.49 per cent. originally classed as being in poor health.

Among the females, 69.1 per cent. were found to present a good appearance, as compared to 95.2 per cent. classed as healthy on entering the trade; 24.9 per cent. fair as compared to 3.81 per cent. in fair health, and 5.8 per cent. a poor appearance, in comparison with 0.79 per cent. entering the trade in poor health.

The wear and tear of industrial life seem to be appreciably greater among the males than the females, although it is to be borne in mind that other factors may play a part; and of these, probably the most important is the fact that marriage removes the women from the trade. This is indicated in the tables where it is shown that the number of women remaining in the industry after the age period 15-19 steadily diminishes.

HEIGHT, WEIGHT, AND CHEST MEASUREMENTS.

The figures given in regard to the height and weight and the measurements for the chest show that the group as a whole conforms to the average standards. There is nothing in these figures to indicate that the workers are physically inferior. On the contrary, the Italian women, and particularly both the Lithuanian men and women, are far above the average from the physical standpoint.

DISTRIBUTION OF 402 MALES ACCORDING TO HEIGHT AND WEIGHT BY AGE GROUPS.

	15-19	20-24	25-34	35-44	45+	TOTAL
Number of cases	68	65	114	92	63	402
Average height (inches) . . .	65 $\frac{1}{3}$	67 $\frac{1}{3}$	66 $\frac{2}{3}$	66 $\frac{3}{4}$	66	66 $\frac{1}{2}$
Average weight (pounds) . .	121	141	146	149	150	142
Normal average (Prudential Insurance Co.)	128	142	147	153	152	144
Relative weight	1.9	2.1	2.2	2.2	2.3	..

DISTRIBUTION OF 341 FEMALES ACCORDING TO HEIGHT AND WEIGHT BY AGE GROUPS.

	15-19	20-24	25-34	35-44	45+	TOTAL
Number of cases	151	90	59	30	11	341
Average height (inches) . . .	62 $\frac{3}{4}$	63 $\frac{1}{3}$	63 $\frac{2}{3}$	62 $\frac{3}{4}$	62 $\frac{2}{3}$	63
Average weight (pounds) . .	118	131	138 $\frac{1}{2}$	144 $\frac{1}{2}$	152	136 $\frac{1}{2}$
Normal average (Prudential Insurance Co.)	120	123	132	134	139	129 $\frac{2}{3}$
Relative weight	1.9	2.1	2.2	2.3	2.4	2.0

CHEST MEASUREMENTS OF 402 MALE EMPLOYEES ACCORDING TO AGE.

	AGES										TOTAL	
	15-19		20-24		25-34		35-44		45+			
	Insp.	Exp.	Insp.	Exp.	Insp.	Exp.	Insp.	Exp.	Insp.	Exp.	Insp.	Exp.
Total.....	68	68	65	65	114	114	92	92	63	63	402	402
Average.....	35.1	31.2	37.6	33.8	38.0	34.7	38.8	35.3	38.9	35.9	37.8	34.3

CHEST MEASUREMENTS OF 341 FEMALE EMPLOYEES ACCORDING TO AGE.

	AGES										TOTAL	
	15-19		20-24		25-34		35-44		45 +			
	<i>Insp.</i>	<i>Exp.</i>	<i>Insp.</i>	<i>Exp.</i>	<i>Insp.</i>	<i>Exp.</i>	<i>Insp.</i>	<i>Exp.</i>	<i>Insp.</i>	<i>Exp.</i>	<i>Insp.</i>	<i>Exp.</i>
Total.....	151	151	90	90	59	59	30	30	11	11	341	341
Average.....	34	31	35½	32	36	32¾	36⅔	33⅓	38¾	35⅔	35	31¾

THE RELATION OF TRADE LIFE TO PRESENT PHYSICAL CONDITION.

In the following tables are shown the various disabilities encountered at the time of the physical examination and the taking of the history:

DISTRIBUTION OF 402 MALE EMPLOYEES BY TRADE LIFE TO PRESENT PHYSICAL CONDITION.

CONDITION		YEARS IN TRADE								TOTAL
		2-4	5-9	10-14	15-19	20-24	25-29	30-39	40+	
Negative.....	31	24	21	28	20	14	3	1	3	145
Positive.....	21	48	54	48	22	27	19	12	6	257
Total.....	52	72	75	76	42	41	22	13	9	402
Muscular strain.....	3	7	15	19	10	10	7	5	2	78
Colds.....	6	14	17	9	5	9	7	6	4	77
Stomach trouble.....	4	17	19	5	6	8	6	3	2	70
Tuberculosis.....	4	14	6	12	3	6	3	2	1	51
Inflamed eyes.....	2	9	15	12	7	4	..	..	..	49
Constipation.....	5	10	10	6	4	4	4	1	1	45
Headache.....	7	8	14	5	1	4	2	2	..	43
Debility.....	1	1	5	1	3	2	..	..	..	13
Anemia.....	3	1	2	3	2	2	..	..	..	13
Throat infection.....	..	1	4	1	..	..	1	..	..	7
Deafness.....	..	..	..	1	1	2	1	1	6	6
Neurasthenia.....	..	..	2	..	1	..	..	..	..	3
Heart disease.....	..	..	..	2	..	..	1	..	..	3

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY TRADE LIFE TO PRESENT PHYSICAL CONDITION.

CONDITION		YEARS IN TRADE								TOTAL
		2-4	5-9	10-14	15-19	20-24	25-29	30-39	40+	
Negative.....	54	47	17	7	6	1	1	1	1	135
Positive.....	48	77	49	19	5	3	4	1	..	206
Total.....	102	124	66	26	11	4	5	2	1	341
Colds.....	29	53	29	14	4	1	2	..	..	132
Headache.....	24	38	21	6	3	..	2	1	..	95
Stomach trouble.....	17	24	16	10	1	2	3	..	..	73
Muscular strain.....	8	14	10	10	2	1	1	1	..	47
Constipation.....	9	13	9	8	..	..	1	..	..	40
Tuberculosis.....	7	5	8	2	..	..	1	..	..	23
Throat trouble.....	3	6	2	1	..	..	..	..	..	12
Anemia.....	2	4	2	..	1	..	..	..	..	9
Influenza.....	..	4	3	1	..	..	..	..	..	8
Skin diseases.....	4	1	2	..	..	..	..	..	..	7
Neurasthenia.....	1	3	..	1	..	1	1	..	..	7
Inflamed eyes.....	2	3	1	1	..	..	..	..	..	7
Debility.....	..	1	3	1	..	..	..	1	..	6
Deafness.....	1	1	1	..	..	..	..	..	..	3
Heart disease.....	..	..	1	1	..	..	..	..	..	2
Typhoid fever.....	..	..	1	..	..	..	..	..	..	1
Pleurisy.....	..	..	..	1	..	..	..	..	..	1
Catarrh.....	..	..	..	1	..	..	..	..	..	1

An examination of the above tables shows that among the 402 males, 145 were negative and 257 had some abnormal condition present; among the 341 females, 135 were negative while 206 presented some abnormality.

Taken as a whole, the data indicate that there is a certain regularity in the increase of the proportion of persons affected by disease with the increase of the trade life, and the susceptibility of the two sexes is about the same—63.7 per cent. for the males and 60.4 per cent. for the females. If, however, we take into account the fact that the same worker may suffer from more than one ailment, we find that for every 100 workers there are 230 ailments for every 100 female workers, and only 140 for every 100 male workers. In this connection it is to be borne in mind that the women are on the average younger and have a shorter trade life than the men.

Although the tendency to some physical ailment increases as the trade life extends, it is to be remembered that this same tendency to physical ailments, especially those of a functional character, such as indigestion and constipation, is true in regard to all classes of people as they advance in years.

The great frequency of "colds"—19.2 per cent. among the males and 38.7 per cent. among the females—emphasizes the close relationship which exists between these acute infections and overheated and badly ventilated rooms.

The disabilities deserving of special notice are muscular strain, headache, tuberculosis, and inflammation of the eyes. These subjects are apparently closely related to the trade, although not peculiar to it, with the exception of conjunctivitis, which seems to be directly due to one of the trade processes. Later in the report the significance of these affections will be dealt with when their relation to other aspects of the problem is considered.

THE MORBIDITY RATE AMONG GARMENT WORKERS AS SHOWN BY HOSPITAL AND DISPENSARY EXPERIENCE.

In order to get an idea as to the general morbidity rate among garment workers, the records of three large general hospitals were analyzed. Out of a total of 32,211 records examined, 1152, or 3.5 per cent., were classed as garment workers. Of this number 916 were males and 236 females. By far the greatest number of the records examined related to dispensary patients, and while these records are not always as accurately kept as one would wish, the information they furnish serves to indicate in a general way the degree and character of morbidity.

The following tables show the results obtained:

HOSPITAL AND DISPENSARY EXPERIENCE.

MALES.

	AGES						TOTAL	PERCENT-AGE
	15-19	20-24	25-29	30-34	35-44	45+		
Tuberculosis, pulmonary	4	24	10	9	9	11	67	7.3
Tuberculosis, surgical . . . . .	..	..	1	..	1	2	4	.4
Neurasthenia	4	33	22	14	52	22	147	16.2
Neuritis . . . . .	..	1	3	3	3	5	15	5.7
Neuritis, brachial . . . . .	..	1	2	3	8	7	21	
Neuritis, lower extremities . . .	..	1	4	3	6	..	14	
Neuritis, occupational . . . . .	..	1	..	..	..	1	2	
Myalgia	6	12	6	2	9	5	40	4.4
Rheumatism (muscular, chronic)	1	9	5	7	13	6	41	4.5
Eye-strain	2	2	..	1	2	1	8	.8
Other nervous disorders	1	1	5	3	3	8	21	2.3
Respiratory affections	6	7	13	19	21	12	78	8.5
Pleura	3	4	5	..	..	2	14	1.5
Cardiovascular system	7	8	4	5	16	17	57	6.2
Nephritis	2	2	4	..	5	10	23	2.5
Gastro-intestinal disorders . .	16	31	27	28	45	35	182	19.9
Malignant disease . . . . .	..	..	..	..	3	9	12	1.3
Typhoid fever	5	8	1	2	2	2	20	2.2
Surgical conditions	12	14	24	15	14	20	99	10.8
Miscellaneous	8	8	8	..	15	12	51	5.5
	77	167	144	114	227	187	916	100

FEMALES.

	AGES						TOTAL	PERCENT-AGE
	15-19	20-24	25-29	30-34	35-44	45+		
Tuberculosis, pulmonary	3	6	1	1	..	..	11	4.7
Tuberculosis, surgical	1	..	..	..	1	..	2	.8
Neurasthenia	32	34	9	7	6	2	90	38.2
Neuritis, brachial	1	..	..	..	..	2	3	1.7
Neuritis, occupational . . . . .	..	1	..	..	..	..	1	
Myalgia	3	4	1	..	..	..	8	3.4
Rheumatism (muscular, chronic)	3	3	..	2	..	..	8	3.4
Eye-strain	4	2	1	..	..	..	7	2.9
Other nervous disorders	5	2	4	..	..	..	11	4.7
Respiratory affections	9	2	1	1	..	..	13	5.6
Pleura	1	1	..	..	..	..	2	.8
Cardiovascular system	1	..	1	1	2	..	5	2.1
Nephritis . . . . .	..	1	..	1	1	1	4	1.7
Gastro-intestinal disorders . .	7	22	2	2	1	3	37	15.7
Malignant disease . . . . .	..	..	..	1	..	2	3	1.2
Surgical conditions	2	1	1	..	3	1	8	3.4
Miscellaneous	11	7	2	1	..	2	23	9.7
	83	86	23	17	14	13	236	100

The figures relating to tuberculosis are not excessive. They undoubtedly represent all the cases in which the disease was in various stages of activity. Inasmuch as hospital statistics are based on a diagnosis representing the principal illness from which the patient is suffering, if he has more

than one complaint there is no way of telling how many latent or suspicious cases of tuberculosis there were.

Next to tuberculosis the conditions which are of especial interest are those apparently connected with the trade, namely, neurasthenia, neuritis, myalgia, rheumatism, so called, and eye-strain. It will be recalled that in the list of complaints given by the workers intensively studied several ailments were quite common, namely, muscular strain and headache. It is not unlikely that the tiredness or muscular strain and the headache so prevalent among those at work may be the forerunners of the conditions which eventually cause the worker to seek relief in a hospital.

Neurasthenia was noted among 16.2 per cent. of the males and 38.2 per cent. of the females. Bearing in mind that of these hospital cases, 81.4 per cent. of the males and 79.3 per cent. of the females were Jews, the diagnosis of neurasthenia cannot be altogether relied on, as this race is notoriously neurasthenic. It is quite likely, however, that fatigue may aggravate this natural tendency.

The number of cases of neuritis was quite high, especially among the males. Of 52 males suffering from some form of neuritis, it is interesting to note that 26, or 50 per cent., were recorded as being pressers. As pressers are often listed under the general term tailor, it is possible that even more workers in this trade process were involved.

As the diagnosis of neuritis was not always made in a neurological clinic, it is quite likely that in many instances the condition was an occupation neurosis rather than a true neuritis. In either case, however, the data serve to show that these painful conditions are not infrequent.

Among the males, myalgia and rheumatism, muscular and chronic, were also noted as being of frequent occurrence. Myalgia and muscular rheumatism probably represent instances of extreme fatigue of a group of muscles. Both conditions are closely related to the occupation neuroses. Chronic rheumatism is a very indefinite term which may refer to pain in the joint itself, or it may be in the muscles about the joint.

Among the females, these painful affections were less common.

It is rather surprising that the number of cases of eye-strain is so small, especially when we consider the high percentage of workers who complain of headache.

In the group which we studied intensively it was noted that 19.9 per cent. of the men and 14.9 per cent. of the women had errors of refraction for which glasses were worn.

Other nervous disorders were noted among 2.3 per cent. of the males and 4.7 per cent. of the females.

The remaining conditions do not call for special comment.

CHAPTER VI.

PHYSICAL AILMENTS AS RELATED TO AGE AND TRADE PROCESSES.

OPERATORS.—BASTERS AND FINISHERS.—PRESSERS.—SKILLED WORKERS (BUSHELMEN, EXAMINERS, CUTTERS, FOREMEN).

In an occupation such as the one under discussion it is important to determine, as far as possible, the direct effect the employment may have upon the worker—and by direct effect we have reference to any injury for which the employment itself may be responsible. Occupations vary tremendously in this respect. Thus in those occupations in which the worker is exposed to traumatic accidents or to the influence of a metallic poison, such as lead, the effect is direct and unquestionable, and in the absence of proper safeguards such accidents are apt to occur independently of what the workman may do, although they are, of course, greatly increased by carelessness on his part.

In many occupations, among which may be classed garment making, there is nothing of the nature of an acute illness comparable with an accident. Usually it is a gradual deterioration of health that is produced. And, in determining the cause of this deterioration of health we must not lose sight of the various factors involved, namely, bad factory sanitation, the habits and home surroundings of the worker, poverty, heredity, age, and sex.

In the tables which follow the attempt has been made to ascertain the number of workers who suffered from ailments which reasonably could be ascribed to the work itself, although even in the case of these ailments, as will be shown later, other contributory factors undoubtedly exerted some influence in their production.

For a proper understanding of the tables it may be stated that the figures relating to "arms," "back," and "legs" refer to strain or undue tiring. The data relating to the eyes refer to inflammatory conditions, which in some instances are apparently directly traceable to one of the trade processes.

The following tables show the distribution of physical ailments, according to age, among the 402 male workers and the 341 female workers:

MALES.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Total males	68	65	115	93	65	402
Physical ailments	6	14	36	28	20	104
Percentage of physical ailments	8.8	21.5	31.3	30.1	30.7	25.8

FEMALES.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Total females	151	90	59	30	11	341
Physical ailments	16	14	4	4	2	40
Percentage of physical ailments	10.6	15.5	6.9	13.3	18.1	14.6

These tables show that among the males those with a long trade life form the majority of the workers, while among the females the number remaining in the trade after the twenty-fourth year rapidly diminishes.

Physical ailments were much more common among the males than among the females, the percentages being 25.8 and 14.6 respectively. The greater frequency of ailments among males is apparently due to the fact that they have a longer trade life than the females, and are thus increasingly liable to the harmful effects of the trade.

In the tables which follow the physical ailments are studied in their relationship to the various trade processes.

OPERATORS.

The major part of the sewing on a factory-made garment is done by power machines. All persons operating sewing machines are grouped under the occupation term "operators." The character of the work done by the operator, however, varies greatly: it may be very simple or it may require a high degree of skill, as in the sewing of a shoulder seam or sewing in a sleeve. The majority of the workers in this trade process are males. It is in this branch of the work that "speeding up" is more prevalent than in any of the other trade processes.

The following tables show the distribution of physical ailments by age groups:

MALE OPERATORS.

PHYSICAL AILMENT	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Negative.....	49	32	46	32	8	167
Arms.....	3	3	1	2	..	9
Back.....	..	4	5	..	..	9
Legs.....	..	1	4	1	..	6
Eyes.....	2	2	2	3	..	9
Total.....	54	42	58	38	8	200
Percentage of ailments.....	9.1	28.1	26.1	18.7	..	16.5

FEMALE OPERATORS.

PHYSICAL AILMENT	AGES			TOTAL
	15-19	20-24	25-34	
Negative.....	24	7	2	33
Arms.....	1	..	..	1
Back.....	2	1	..	3
Legs.....	2	..	..	2
Total.....	29	8	2	39
Percentage of ailments.....	17.2	12.5	..	15.4

The table relating to the males shows that the majority of the ailments referable to the trade process occur in the age groups 20-24 and 25-34 years. It is also to be noted that the arms and back are implicated most frequently. This is to be explained by the character of the work which brings these parts of the body into play.

The eye affections represent mild forms of conjunctivitis. Varying degrees of congestion of the conjunctiva are relatively frequent, and are probably due, partly, to artificial lighting, and partly to the fact that the workers are rarely so placed that the lighting facilities are used to the best advantage.

The number of females in this group is too small to draw any conclusions from. It does indicate, however, that young girls seem to be more susceptible to the strain of this work than the males in the same age group. Thus among 29 females from fifteen to nineteen years of age, 17.2 per cent. were affected, while among 54 males of the same age but 9.1 per cent. had physical ailments attributable to the trade process.

BASTERS AND FINISHERS.

While the operator's work is done entirely by machinery, that of the baster and finisher is done by hand. Furthermore, while males form the

majority of the operators, the females predominate among the basters and finishers.

This trade process consists in assembling the different parts of the garment and fastening them together with coarse running stitches. In like manner the canvas, hair-cloth, and padding used to give shape to the coat are fastened to the garment by the baster.

Buttonhole making, button-sewing, putting on labels and hangers are also largely done by hand. The basters and finishers comprise the largest group studied, numbering 328 in all—266 females and 62 males. The following tables show the distribution of ailments by age groups:

MALES.

PHYSICAL AILMENTS	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Negative.....	4	10	19	10	7	50
Arms.....	..	..	3	..	1	4
Back.....	..	1	..	..	..	1
Legs.....	..	..	1	4	..	5
Eyes.....	1	..	1	..	..	2
Total.....	5	11	24	14	8	62
Percentage of ailments.....	20.0	9.0	20.8	28.5	12.5	19.3

FEMALES.

PHYSICAL AILMENTS	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Negative.....	93	64	51	21	9	238
Arms.....	3	..	..	..	..	3
Back.....	2	8	2	2	1	15
Legs.....	2	1	..	1	1	5
Eyes.....	2	2	..	1	..	5
Total.....	102	75	54	25	11	266
Percentage of ailments.....	8.8	14.7	3.7	16.0	18.2	10.5

It will be noted in the table relating to females that muscular strain referable to the back is the most common affection. As the women are apt to sit leaning forward, the strain of this constantly fixed posture is doubtless largely responsible for the number of these complaints. It must be borne in mind, however, that among women backache is not infrequently complained of. Among the male basters and finishers backache plays no part at all.

In comparing the operators, composed of both males and females, the males predominating, with the basters and finishers, also composed of both

males and females, but with the females predominating, we find that ailments attributable to trade processes occur in 16.3 per cent. of the operators and in 12.2 per cent. of the basters and finishers. The higher percentage of ailments among the operators may be ascribed to two factors: (1) The greater physical strain involved in operating and (2) the longer trade life of the men, who comprise the great majority of the operators.

PRESSERS.

The final step in the manufacture of a ready-made garment is the pressing. This is sometimes done with hand-irons weighing from 8 to 12 pounds. The heavier work, however, is done by an iron which is attached to a horizontal arm and is swung into position on the garment. The pressure is obtained by a foot lever which forces the ironing board up against the iron. Formerly the irons were heated over an open coal fire, and in a few shops this is still done. But for the most part the iron, instead of being solid, is hollow, and is kept constantly heated by means of a gas-flame within the iron. With the exception of the cutters, who are few in number, the pressers are the only ones whose work requires a standing posture.

Pressing is exclusively an occupation of males in the ready-made clothing industry. In this group, the third largest studied, numbering 108 workers, the physical ailments bear an interesting relation to the trade process. In fact, it is the one process in which the relationship between cause and effect appears to be reasonably certain.

The following table shows the distribution of physical ailments by age groups:

PHYSICAL CONDITION	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Negative.....	2	8	14	18	18	60
Arms.....	..	1	4	2	1	8
Back.....	..	1	..	..	2	3
Legs.....	..	1	4	2	6	13
Eyes.....	..	..	6	10	8	24
Total.....	2	11	28	32	35	108
Percentage of ailments.....	..	27.2	50.0	43.7	48.5	44.4

In this table it is to be noted that 35, or 32.2 per cent., of the group are forty-five years of age or older, and that nearly one-half (44.4 per cent.) of the entire group have some physical ailment.

Muscular strain is noted more frequently in the legs than elsewhere, largely because of the standing posture and to some extent because the legs are used in working the lever of the pressing machine. The arms are also

frequently the site of pain. As we shall show later, the occurrence of neuritis and occupational neuroses is more frequently among the pressers than any of the other workers.

The ailment most common to the pressers was a highly inflamed condition of the eye—conjunctivitis. Out of a total of 108 pressers, this condition was noted in 24, or 22.2 per cent. That the eye condition is directly traceable to the influence of this trade process there can be but little doubt, although it is not clear as to which factor is at fault. The eyes may be irritated by being constantly exposed to the steam vapor arising from the dampened cloth or from gas fumes escaping from a leaking tube. So far as the distribution by age groups is concerned, there is no relationship between advancing age and the frequency of this condition.

SKILLED WORKERS.

In this group, 30 in number, are the bushelman (10), the examiners (7), the cutters (7), and the foremen (6). In addition to the foreman, each shop depending on its size will contain one or more of these skilled workers.

The bushelers may be changed from one kind of work to another, or be assigned to specially fine work. Often their duty consists entirely of correcting the faults of other employees.

The examiner inspects every garment made for faults which are likely to occur at any time.

In the small contract shops there are no cutters, this work being done in the main factory. This is a skilled process and requires an apprenticeship and special training. Cutting may be done with shears or a knife, but as a rule a large number of thicknesses of cloth are cut at once by means of an electric power knife. Such an instrument is capable of cutting 30 or 40 thicknesses of cloth at once.

Each shop, no matter how small, has a foreman. In the small shops the foreman usually works at one of the processes in addition to his supervising duties.

The distribution of ailments in this group was as follows:

Negative.....	23
Arms.....	1
Back.....	2
Legs.....	3
Eyes.....	1

Among the women is a small group of 27, composed of 7 cleaners whose duty it is to pull out the basting threads after the garment has passed through the operating or machine process, and 20 buttonhole makers. Among the latter four complained of backache.

CHAPTER VII.

HOME ENVIRONMENT.

STRUCTURAL CONDITION OF HOUSE.—SANITARY FACILITIES OF HOME.—HYGIENIC CONDITION OF THE HOME.—PHYSICAL AILMENTS AND LIVING CONDITIONS.—HEALTH OF FAMILIES OF WORKERS.—COMPOSITION OF HOUSEHOLDS STUDIED.—PERSONS PER ROOM BY NATIONALITY.—PHYSICAL AILMENTS AS RELATED TO PERSONS PER ROOM.—RELATION OF INDIVIDUAL STUDIED TO HOUSEHOLD.

To show that this or that occupation is inherently harmful it is necessary to eliminate all factors which can in any way be considered as being contributory. This cannot be done unless we make a thorough study of all the circumstances relating to the worker's daily life. The danger of a bad working place may be offset by excellent living conditions. On the other hand, the working place may be ideal, while the home hygiene is as bad as possible. As more than half of the worker's time is spent in his home, the influence of unsanitary surroundings cannot be ignored.

And by home hygiene is meant not only the character of the home and its environment, but also the habits of the individual. To obtain data of this character is not only laborious, but it furthermore requires an infinite amount of tact and patience on the part of the investigator. In the matter of completeness we believe that the data which have been gathered in regard to these facts are unique in the study of the health aspects of a given industry.

In regard to the terms employed, namely, good, fair, and bad, to designate the living conditions, it may be said that the descriptive data of home conditions gathered in this investigation were in sufficient detail to justify the broad classification adopted. The only error which is apt to occur is in the use of the term "fair." Facts recorded under this heading might in some instances more properly be designated as good, and in others as bad.

STRUCTURAL CONDITION OF HOUSE.

Beginning with the character of the house itself, and estimating its good or bad qualities on the basis of furnishing adequate light, ventilation, and proper conveniences, the following results were obtained:

DISTRIBUTION OF 402 MALE EMPLOYEES BY HOUSING CONDITIONS STRUCTURALLY.

STRUCTURAL CONDITION	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Good.....	21	32	52	53	33	191
Fair.....	30	17	43	27	22	139
Poor.....	17	16	19	12	8	72
						402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY HOUSING CONDITIONS STRUCTURALLY.

STRUCTURAL CONDITION	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Good.....	46	33	19	15	..	113
Fair.....	57	35	22	6	7	127
Poor.....	48	22	18	9	4	101
						341

SANITARY FACILITIES OF THE HOME.

In the following tables the housing conditions, with special reference to sanitary facilities, are summarized for the 402 male and the 341 female employees:

DISTRIBUTION OF 402 MALE EMPLOYEES BY SANITARY FACILITIES ACCESSIBLE OR DIFFICULT.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Water-supply:						
Yard.....	18	12	16	12	5	63
Apartment.....	50	53	98	80	58	339
Water-closet:						
Yard.....	35	28	49	25	26	163
Apartment.....	22	29	38	43	29	161
Privy-vault.....	11	8	27	24	8	78
						402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY SANITARY FACILITIES ACCESSIBLE OR DIFFICULT.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Water-supply:						
Yard.....	43	27	22	8	1	101
Apartment.....	108	63	37	22	10	240
Water-closet:						
Yard.....	78	44	30	10	7	169
Apartment.....	45	25	21	17	3	111
Privy-vault.....	28	21	8	3	1	61
						341

It is shown that 63 of the males and 101 of the females secured their water-supply from the yard. The water-closet was located in the yard in 163 instances among the males and 169 among the females.

The most noteworthy feature is the large number of privy-vaults, namely, 18.7 per cent. for the entire group studied. It is almost unbelievable that a modern city, and one proudly designated as the city of homes, would countenance the number of open privy-vaults which at present exist. Although the number has been greatly reduced within the past few years by the activities of the Philadelphia Housing Commission, it is estimated that there still remain 20,000.

HYGIENIC CONDITION OF THE HOME.

In estimating the influence of housing conditions one must not lose sight of the fact that two elements are involved: (1) The good or bad character of the house itself; (2) the manner in which the people live. In another study of housing conditions made by the Phipps Institute it has been shown that in some instances the house may be rated at 100 per cent. while the living hygiene may be 0 per cent. In other words, it takes two factors to make a slum—bad houses and bad tenants.

The hygienic condition of the homes studied is shown in the following tables:

DISTRIBUTION OF 402 MALE EMPLOYEES BY HYGIENIC CONDITION OF THE HOME.

Clean.....	184
Fairly clean.....	112
Dirty.....	106
	402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY HYGIENIC CONDITION OF THE HOME.

Clean.....	135
Fairly clean.....	92
Dirty.....	114
	<hr/> 341

PHYSICAL AILMENTS AND LIVING CONDITIONS.

The following table shows the distribution of physical ailments according to living conditions among 402 males:

LIVING CONDITION—MALES.

PHYSICAL AILMENT	GOOD		FAIR		BAD	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Negative.....	116	63.1	61	54.4	70	66.0
Arms.....	9	4.8	10	8.9	3	2.8
Back.....	8	4.5	4	3.6	3	2.8
Limbs.....	13	7.1	7	6.2	7	6.6
Inflamed eyes.....	20	10.8	8	7.3	8	7.6
Tuberculosis.....	15	8.1	22	19.6	14	13.3
Deafness.....	3	1.6	..	..	1	0.9
Total.....	184	100.0	112	100.0	106	100.0

When we compare the figures relating to living conditions with those relating to physical ailments, we find the following distribution:

	GOOD CONDITION	FAIR CONDITION	BAD CONDITION
	Per Cent.	Per Cent.	Per Cent.
Negative.....	63.1	54.4	66.0
With physical ailment.....	36.9	45.1	34.0
	100.0	100.0	100.0

In addition to the examination into the physical condition of the 402 males, 341 females were examined with relation to their living condition, working environment, and trade processes.

The figures as given in the table show the following distribution of physical ailments according to the living conditions of the workers:

LIVING CONDITIONS—FEMALES.

PHYSICAL CONDITION	GOOD		FAIR		BAD	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Negative.....	107	79.2	74	80.3	98	85.9
Arms.....	2	1.4	2	2.2	1	0.9
Back.....	10	7.4	4	4.4	7	6.3
Limbs.....	5	3.8	2	2.2	1	0.9
Eyes.....	2	1.5	2	2.2	2	1.7
Tuberculosis.....	9	6.7	7	7.6	5	4.3
Total.....	135	100.0	92	100.0	114	100.0

When calculated in percentage, the relationship between living conditions and physical ailments shows the following:

	GOOD	FAIR	BAD
	Per Cent.	Per Cent.	Per Cent.
Negative.....	79.2	80.3	85.9
With physical ailments.....	20.8	19.7	14.1
	100.0	100.0	100.0

The above tables show that among the males only 184, or 45.7 per cent., were living under conditions which could be considered as clean, while among the females the number of those living in clean homes was 135, or 39.6 per cent.

Among those suffering with ailments no marked difference is apparent between those classed as clean, fairly clean, and dirty. In estimating the influence of unsanitary home surroundings it must be remembered that we are dealing with people actually engaged at work, and not as yet incapacitated. It is a fair presumption that prolonged living amid unsanitary conditions does eventually affect the health adversely. This is amply borne out by the fact that the general morbidity rate is, as a rule, higher under such conditions of living. The worker who today is apparently healthy, even amidst unsanitary conditions, may in a few months show evidences of failing health.

GENERAL HEALTH CONDITIONS OF THE FAMILIES OF THE WORKERS.

It appears that, as far as ascertainable, the large majority of the families were in good health. The only notable finding was tuberculosis, which was

encountered in the family in 40 instances: 27, or 6.7 per cent., out of a total of 402 male employees, and 13, or 3.89 per cent., out of 341 female employees.

DISTRIBUTION OF 402 MALE EMPLOYEES BY HEALTH CONDITION OF FAMILY.

CONDITION	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Good.....	58	59	100	81	56	354
Fair.....	10	6	14	11	7	48
						402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY HEALTH CONDITION OF FAMILY.

CONDITION	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Good.....	133	84	52	23	7	299
Fair.....	18	6	7	7	4	42
						341

COMPOSITION OF HOUSEHOLDS OF WORKERS STUDIED.

This aspect of the problem has been studied from a number of viewpoints.

DISTRIBUTION OF 402 MALE EMPLOYEES. NUMBER OF PERSONS PER ROOM BY NATIONALITY.

NATIONALITY	CASES	TOTAL NUMBER OF ROOMS	AVERAGE NUMBER OF ROOMS	TOTAL NUMBER OF PERSONS IN HOUSEHOLDS	AVERAGE NUMBER OF PERSONS IN HOUSEHOLDS	PERSONS PER ROOM
Russia:						
Hebrews.....	239	1048	4.4	1233	5.2	1.2
Lithuanians.....	52	172	3.3	287	5.5	1.7
Italy.....	43	189	4.4	274	6.4	1.4
United States.....	9	55	6.1	57	6.3	1.0
Rumania.....	17	75	4.4	89	5.2	1.2
Austria.....	31	138	4.5	145	4.7	1.1
Hungary.....	6	33	5.5	30	5.0	0.9
England.....	3	15	5.0	15	5.0	1.0
Germany.....	2	17	6.5	8	4.0	0.5
Total.....	402	1742	4.3	2138	5.3	1.2

As this table indicates, there is no evidence of marked overcrowding in the group as a whole, namely, 1.2 persons per room. In individual

instances, however, room congestion does occur notably among the Lithuanians.

DISTRIBUTION OF THE 341 FEMALE EMPLOYEES.—NUMBER OF PERSONS PER ROOM BY NATIONALITY—FEMALES.

ALL AGES	CASES	NUMBER OF ROOMS	AVERAGE ROOMS	NUMBER IN HOUSEHOLD	AVERAGE PERSONS	AVERAGE PERSONS PER ROOM
Russia:						
Hebrew.....	98	459	4.7	602	6.1	1.3
Lithuania.....	59	289	4.9	394	6.7	1.4
Italy.....	164	702	4.3	980	6.0	1.4
United States.....	1	4	4.0	4	4.0	1.0
Rumania.....	8	33	4.1	42	5.3	1.3
Austria.....	4	28	7.0	38	9.5	1.4
Hungary.....	2	12	6.0	20	10.0	1.7
England.....	3	18	6.0	20	6.7	1.1
Spanish.....	1	10	10.0	13	13.0	1.3
German.....	1	6	6.0	4	4.0	0.7
Total.....	341	1561	4.6	2117	6.2	1.4

PHYSICAL AILMENTS AS RELATED TO PERSONS PER ROOM.

The following tables show the relationship existing between physical ailments and persons per room:

MALES.

PHYSICAL CONDITION	LESS THAN TWO PERSONS PER ROOM		TWO AND LESS THAN THREE PER ROOM		THREE AND OVER PER ROOM	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Negative.....	159	61.8	72	60.0	16	64.0
Arms.....	10	3.9	8	6.7	4	16.0
Back.....	13	5.1	1	0.8	1	4.0
Limbs.....	18	7.0	8	6.7	1	4.0
Eyes.....	20	7.7	15	12.5	1	4.0
Tuberculosis.....	34	13.3	15	12.5	2	8.0
Deafness.....	3	1.2	1	0.8	..	..
Total.....	257	100.0	120	100.0	25	100.0

It is evident from the figures, however, that this method is not productive of conclusive evidence. Out of a total of 402 male workers, 120 lived under conditions necessitating the sharing of rooms on the basis of two persons per room and over, and 25 with three persons per room and over—in other words, 29.8 per cent. of the workers lived under conditions

which may be termed crowded, and 6.2 per cent. of the same group of workers were housed under conditions which averaged three or more persons per room.

It is a significant fact, however, that among those found to have *no* physical ailment, one-fifth, or 6.6 per cent., of the workers were living under very crowded conditions. On the other hand, among those suffering from tuberculosis only 3.9 per cent. were living under very crowded conditions.

An analysis of the figures relating to crowding in the homes of the female workers shows the following distribution:

FEMALES—CROWDING.

PHYSICAL CONDITION	LESS THAN TWO		TWO AND LESS THAN THREE		THREE AND OVER	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Negative.....	103	83.1	164	80.7	12	92.3
Arms.....	1	0.8	3	1.4	1	7.7
Back.....	9	7.3	12	5.8	..	..
Limbs.....	5	4.0	3	1.4	..	..
Eyes.....	..	..	5	2.4	..	..
Tuberculosis.....	5	4.0	16	7.8	..	..
Deafness.....	1	0.8	1	0.5	..	..
Total.....	124	100.0	204	100.0	13	100.0

These figures indicate that the largest amount of crowding was found among the workers, who, from the point of view of illnesses due to trade processes, were found to be practically free from ailment. As far as this investigation is concerned, it was not possible to trace the relationship between physical ailments due to trade process and the amount of crowding.

The analysis of the figures on crowding, as related to tuberculosis, indicates that there were no female workers living under conditions of three and over persons per room, and out of a total of 21 tuberculous workers, none were living under conditions necessitating a very serious amount of crowding.

Having considered the home environment both as to actual standards of sanitation and hygiene and intensity of room use from the point of view of crowding, there is little evidence pointing to the relation of these conditions to physical ailments which may be classified as "occupational ailments."

The criticism made regarding unsanitary living conditions also holds good in respect to overcrowding. While those living under overcrowded conditions were apparently healthy at the time of investigation, it does not

alter the fact that such conditions are not compatible with health. To show the effect of overcrowding, if persisted in, on this particular group would necessitate a study of their health several years hence. A sufficiently large number of studies on the relationship existing between overcrowding and morbidity have been made already, and the data thus obtained points conclusively to the fact that such a relationship does exist.

As in the case of the men, room congestion is not a marked feature when the average for the entire group is taken, namely, 1.4 persons per room.

It is, therefore, seen that the females were living under conditions which made it necessary for 140 women to live in 100 rooms, while in the case of the males there were only 120 persons per 100 rooms.

RELATION OF THE INDIVIDUAL STUDIED TO THE HOUSEHOLD. MALES.

DIVISIONAL GROUPS	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Number of individuals.....	68	65	114	92	63	402
Number of families.....	45	33	87	80	54	299
Head of family.....	..	20	78	80	54	232
Ages members of family:						
Under 5.....	21	17	84	57	13	192
5-14.....	77	15	86	165	42	385
14 and over.....	205	138	235	243	228	1049
Boarders.....	8	10	26	27	9	80
Total in family.....	311	180	431	492	292	1706
Individuals who are boarders ..	23	32	27	12	9	103
Total members of households* ..	415	295	477	406	325	1918
Total number of families having boarders.....	18	25	21	17	10	91
Number boarders in those families.....	24	46	43	33	17	163
Number persons in household..	117	160	124	121	61	583
Number stated as "boarding-house".....	8	12	19	7	3	49

* Excluding "boarding-houses."

FEMALES.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Number of families.....	125	54	41	28	9	257
Heads of families.....	..	1	7	12	5	25
Members of families:						
Under 5.....	70	16	10	7	3	106
5-14.....	213	40	62	27	6	348
14 and over.....	601	234	119	90	26	1070
Boarders.....	55	21	7	3	..	86
Total in families.....	939	311	198	127	35	1610
Average.....	7.5	5.8	4.8	4.5	3.9	6.3
Individuals who are boarders..	26	36	18	2	2	84
Total in households*.....	1012	461	242	133	43	1891
Cases.....	151	90	59	30	11	431
Number of families having boarders.....	39	27	15	4	2	87
Number of boarders in those families.....	77	58	21	4	2	162
Persons in those households...	295	177	77	24	8	581
Stated as boarding-houses.....	10	14	6	1	..	31

* Excluding "boarding-houses."

With the growth of this industry and the migration of labor from one center to another has come a problem of housing persons living away from their families. In this city the problem has reached large proportions and constitutes a serious social problem. Rooming houses or lodging places are resorted to largely by this class of the population, and a proper regulation of these boarding places should receive the attention of the community both locally, and, as it affects immigration, nationally.

In this particular study the most serious evils—serious in relation to hygiene, sanitation, and morality—were found in the tenements and small separate rooms, where groups of men "kept house" together. The conditions of living are the lowest possible, precluding even the common decencies of life.

These tables show that 103 of the male workers examined lived in private families as lodgers; in other words, 25.2 per cent. of these workers were living away from their families.

In all there were 91 families out of a total of 299 visited housing lodgers.

In the case of the females, 84, or 24.6 per cent., of the workers were living with families other than their own. On the other hand, 87, or 25.5 per cent., of the families visited kept lodgers and boarders.

Under conditions where lodgers and boarders are kept the privacy of the family life is seriously interfered with. The average number of persons in the families with lodgers was 8.5 per cent. in the case of the families with female workers, and in the case of the males the average size of the family is 8.2 per cent. The average size of all the families visited was 5.7 per cent. in the case of the males, and 6.3 per cent. in the case of the females. These figures would seem to indicate that the female workers live under somewhat more crowded conditions than the males, and that the taking of boarders or lodgers helps to increase congestion.

CHAPTER VIII.

HABITS OF THE WORKERS.

NOURISHMENT.—RELATION OF PHYSICAL AILMENTS TO NOURISHMENT
—AMOUNT OF SLEEP.—RELATION OF PHYSICAL AILMENTS TO SLEEP.—
USE OF ALCOHOL.

NOURISHMENT.

There is no phase of industrial life which is more important than the food question. It is almost axiomatic that health cannot be maintained or the strain of overwork compensated for unless the individual is properly fed. The prudent man feeds his horses regularly, and the harder he works them, the more oats he gives them. The human worker, on the other hand, is often indifferently fed in one of three ways: either he is irregular in his habits of eating, or he eats an insufficient amount, or he eats a poor quality of food.

In the following tables it will be noted that a record has been made as to whether the meals were regular or irregular, and also as to whether or not they were nourishing.

Among the males the percentage of those whose meals were irregular or both irregular and not nourishing is 23.3 per cent.; among the females it was 20.5 per cent.

DISTRIBUTION OF 402 MALE EMPLOYEES BY MEALS AND TIME OF EATING.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Nourishing:						
Regular.....	57	49	85	71	46	308
Irregular.....	2	13	10	12	8	51
Not nourishing:						
Regular.....	6	..	5	4	4	19
Irregular.....	3	3	8	5	5	24
Total	68	65	114	92	63	402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY MEALS AND TIME OF EATING.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Nourishing:						
Regular.....	119	76	43	24	9	271
Irregular.....	16	6	6	2	1	31
Not nourishing:						
Regular.....	7	3	3	1	..	14
Irregular.....	9	5	7	3	1	25
Total	151	90	59	30	11	341

RELATION OF PHYSICAL AILMENTS TO NOURISHMENT.

The following tables show the relationship which exists between insufficient food and ailments attributable to the trade.

MALES.

PHYSICAL CONDITION	AGES										TOTAL	
	15-19		20-24		25-34		35-44		45 +			
	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.
Negative	39	12	39	4	69	3	46	5	25	5	218	29
Arms	3	1	3	1	7	1	3	1	1	1	17	5
Back .....	..	..	3	3	4	2	..	..	2	1	9	6
Limbs .....	..	..	2	..	6	3	5	3	4	4	17	10
Eyes	2	1	3	..	6	3	10	3	8	..	29	7
Tuberculosis .	8	2	6	1	6	3	12	3	6	4	38	13
Deafness ....	..	..	..	..	1	..	1	..	1	1	4	..
Total ...	52	16	56	9	99	15	77	15	47	16	332	70
Per cent. positive	25	25	30.4	55.6	30.4	80	40.3	66.7	46.8	68.7	34.3	58.6
Per cent. negative	75	75	69.6	44.4	69.6	20	59.7	33.3	53.2	31.3	65.7	41.4

FEMALES.

PHYSICAL CONDITION	AGES										TOTAL	
	15-19		20-24		25-34		35-44		45+			
	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.	Suf.	Insuf.
Negative	110	19	62	7	42	8	16	6	7	2	238	42
Arms	4	..	..	..	..	..	..	..	..	..	4	..
Back	4	..	8	1	1	1	5	..	..	1	18	3
Limbs	3	1	1	1	..	..	..	1	..	1	6	2
Eyes	1	1	1	1	..	..	..	1	..	..	2	3
Tuberculosis .	2	4	3	4	5	2	..	1	..	..	10	11
Deafness	1	1	..	..	..	..	..	..	..	..	1	1
Total	125	26	75	14	48	11	21	9	7	4	279	62
Per cent. positive	12	26.9	17.4	50	12.5	27.3	23.8	33.4	100	50.0	15.1	32.3
Per cent. negative	88	73.1	82.6	50	87.5	72.7	76.2	66.6	..	50.1	84.9	67.7

Thus of the total number of males (402), 58.6 per cent. of those with insufficient food had some ailment as compared to 34.3 per cent. who had sufficient food. Among 341 women, 32.3 per cent. with insufficient food suffered from some ailment, while only 15.1 per cent. of those with sufficient food were similarly affected.

From these figures it is reasonable to assume that lack of proper food must have a decided influence on the production of fatigue and the lowering of the individual's resistance. And this seems to be borne out by the figures relating to tuberculosis.

Among the males getting insufficient food, 18.5 had evidence of tuberculous infection, while of those getting sufficient food, the percentage was 11.4.

Among the females the difference is even more marked, the figures being 17.7 per cent. for those with insufficient and 3.9 per cent. for those with sufficient food.

In looking over the diets of the workers one is struck by the want of variety in foods in most of the households.

The lunches as seen in the factories at noon hour consisted of sandwiches poorly prepared of sausage, bologna, or cold fried eggs, cucumbers, not even prepared, fruit frequently unripe, occasionally milk for the women, frequently beer for the men. In the households bread, meat, soup, and potatoes—among the Italians, macaroni, of course, and among the Russians, salt herring and tea—constitute the principal articles of diet.

Since the working capacity of the individual depends upon his nourishment, an abundance of cheap and good food is one of the essentials for a productive working class.

Special attention was given to the matter of nourishment in this study, and in most cases the chief faults to be found were with the want of variety, previously mentioned, and the irregularity of eating. It is not an uncommon thing for a worker to leave his home early in the morning without food and later take a lunch of simply bread and butter at the factory.

The observations made in this study point to the necessity for instructing the large body of workers in the choice, selection, and preparation of foods and encourage the hope that the teaching of the value of different foods and a training in marketing and cooking in schools may have an influence in the future.

AMOUNT OF SLEEP.

This has a very important relationship to the individual's health. It is not possible, except for short periods, for the worker to render proper service, on the one hand, or, on the other, to maintain health without the proper amount of sleep. "Burning the candle at both ends" may be ac-

complished by undue hours of work, such as occur during the rush periods of the trade, or it may result from the worker staying up unduly late because of pleasure. In the following tables are recorded the average number of hours each worker believed he obtained. It is generally assumed that eight hours out of the twenty-four should be devoted to sleep. For the young working adult this is almost a necessity; among the older individuals less sleep is needed, as a rule. In the appended tables it will be noted that a very considerable number of those in the age groups 15-19 and 20-24 admitted to six or seven hours only.

It will also be noted that the bed-room was dark and incapable of proper ventilation in 40 instances—16 among the males and 24 among the females.

DISTRIBUTION OF 402 MALE EMPLOYEES BY AMOUNT OF SLEEP PER DAY.

HOURS	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
4.....	..	..	..	1	1	2
5.....	..	..	..	3	1	4
6.....	4	4	10	10	4	32
7.....	13	17	32	30	20	112
8.....	48	39	65	40	34	226
9.....	3	5	6	8	3	25
10.....	..	..	1	..	..	1
Total	68	65	114	92	63	402
Bed-rooms, dark.	4	5	2	4	1	16

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY AMOUNT OF SLEEP PER DAY.

HOURS	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
4.....	..	..	..	..	..	..
5.....	..	..	..	..	..	..
6.....	4	..	2	1	..	7
7.....	17	16	9	2	..	44
8.....	102	59	32	22	7	222
9.....	25	15	16	3	4	63
10.....	3	..	..	2	..	5
Total	151	90	59	30	11	341
Bed-rooms, dark	12	3	6	3	..	24

RELATION OF PHYSICAL AILMENTS TO SLEEP.

	MALES (402)				FEMALES (341)			
	SUF.	PER CENT.	INSUF.	PER CENT.	SUF.	PER CENT.	INSUF.	PER CENT.
Negative....	168	63.1	79	58.1	237	87.1	46	66.6
Arms.....	14	5.3	8	5.9	2	0.7	2	2.9
Back.....	8	3.1	7	5.2	12	4.4	6	8.7
Limbs.....	15	5.6	12	8.8	5	1.8	3	4.4
Eyes.....	24	9.0	12	8.8	3	1.1	2	2.9
Tuberculosis	34	12.7	17	12.5	12	4.5	9	13.0
Deafness....	3	1.2	1	0.7	1	0.4	1	1.5
	266	100.0	136	100.0	272	100.0	69	100.0
Negative....	..	63.1	..	58.1	..	87.1	..	66.6
Positive.....	..	36.9	..	41.9	..	12.9	..	33.4

In the above table it is to be noted that among the males not obtaining sufficient sleep 41.9 per cent. suffered from some ailment, as compared to 36.9 per cent. in which sufficient sleep was obtained.

Among the females the difference is very marked—33.4 per cent. with insufficient sleep having an ailment as compared to 12.9 per cent. having an ailment with sufficient sleep.

Among the males the percentage of those with a tuberculous lesion having a sufficient and an insufficient amount of sleep is the same; among the females 13 per cent. with insufficient sleep had a lesion as compared to 4.5 per cent. with sufficient sleep.

Both the table on nutrition and that on sleep indicate that women are less resistant than men when food and sleep are insufficient.

The important bearing that these figures have upon the effect of work upon the health of the workers can hardly be overestimated. They point to the need for the extension of "industrial hygiene" into the home, a matter as difficult to attain and quite as frequently neglected as the conditions that are permitted to exist within the factory itself, whether dependent upon the employer or the employee.

The relation between personal hygiene, as shown by the figures dealing with nutrition and sleep, and the trade processes, with their influence upon the health of the worker, are inseparable, and point out the need for correlating personal and industrial hygiene.

THE USE OF ALCOHOL.

To determine whether an individual uses alcohol to excess is extremely difficult. For the most part it depends on the individual questioned. While some freely admit to the excessive use of alcohol, the majority who use it will never admit that they are more than moderate users, although they may really be drinking to excess. The immoderate moderate drinker is very frequently met with.

In this study every individual was questioned as to whether alcohol was used. For the most part the data obtained are open to the criticism mentioned above. In one group, however, the admission as to excessive use seemed to be clearly substantiated. Among the Lithuanians the free use of alcohol in the form of gin and whisky was admitted frankly by many, and that there was every reason to believe this was apparent by its use at meal-time.

The following tables show the results obtained in this group:

ALCOHOLISM AMONG LITHUANIAN GROUP, ACCORDING TO AGES—FEMALES.

	15-19	20-24	25-34	35-44	45+
None.....	8	9	2	..	..
Moderate.....	7	18	6	3	..
Excessive.....	..	2	6	..	..
Total.....	15	29	14	3	..

ALCOHOLISM AMONG LITHUANIAN GROUP, ACCORDING TO AGES—MALES.

	15-19	20-24	25-34	35-44	45+
None.....	2	1	5	..	1
Moderate.....	1	5	7	..	3
Excessive.....	1	5	12	4	8
Total.....	4	11	24	4	12

CHAPTER IX.

WAGES AND TRADE LIFE AS RELATED TO FACTORY CONDITIONS.

RELATION OF EARNING CAPACITY TO FACTORY CONDITIONS.—WAGES OF OPERATORS.—WAGES OF PRESSERS.—WAGES OF BASTERS AND FINISHERS.—COMPARISON OF WAGES PAID TO MEN AND TO WOMEN.—INFLUENCE OF ENFORCED IDLENESS AND OVERTIME WORK.—HOURS OF WORK PER WEEK.—PIECE WORK AND WAGE WORK.—VACATIONS.—SECONDARY EMPLOYMENT.—INSURANCE.

The manufacture of clothing allows of an extreme division of labor in the production of every garment. At the same time the various operations involved in the making of a coat, a vest, or a pair of pants do not stand out distinctly, and may be merged and performed by a single individual.

The needle, the sewing-machine, the pressing iron, and the shears are the chief implements of the garment-workers' trade. These tools indicate the primary division of labor into machine operators, hand-sewers, pressers, and trimmers or finishers, and for the purpose of this study this broad classification has been used.

In most industries the experience of years of work in a particular trade tends to increase the earning capacity of the worker. This is generally affected by conditions of the market, whether or not the trade is seasonal, the physical condition of the worker, and the method of pay in use—piece work or weekly wage.

These statistics of earning were collected under different conditions of industrial activity. Naturally, the earnings of employees were affected in varying degrees by lack of work or abundance of opportunities for employment. An accurate record of time worked for all employees was unfortunately not obtainable for any but time workers, and since payment by the piece is widely prevalent, it is a matter of serious inconvenience that many shops keep no record of hours. Likewise the employment of women beyond legal hours during irregular periods or at odd times is difficult to determine, as they do not remember how much or in what way overtime was worked by them.

It is not an uncommon thing for workers to begin their day at 3 A. M. during the rush season, and end at 7 P. M. One tailor testified that he knew many men who worked during the busy season six days and three nights in the same week, and that he had repeatedly seen men work thirty-six hours without any interruption or sleep or hardly any time to take their meals. Moreover, these long hours are much more exhausting now than they were twenty years ago, owing to the increased speed and exertion.

Wages vary enormously, frequently with no apparent reason but the greater or less need of the workers and their greater or less ability as bargainers. In one workshop several different prices for precisely the same work were found.

The rate of wages for piece work during the year 1912-13, which was furnished by the superintendent of a large factory in this city, is shown in the following table:

	\$10 SUIT	\$15 SUIT	\$20 SUIT
Cutting and trimming.....	\$0.15	\$0.21	\$0.25
Making coat.....	.75	1.00	1.50
Making pants.....	.30	.40	.55
Making vest.....	.25	.35	.50
Total.....	\$1.45	\$1.96	\$2.80

Individually, however, for each process the rate is more finely subdivided; thus a vest finisher is paid from eight to ten cents per vest. Her output varies in rush season from fifteen to twenty vests per diem.

RELATION OF EARNING CAPACITY TO FACTORY CONDITIONS.

The three main subdivisions of the garment-making industry are operating, pressing, and basting and finishing. These three divisions represent the great majority of the workers, and a study of their wages gives a fairly representative picture of the trade as a whole. The other subdivisions are each represented by a very few skilled workers, who in some instances are paid a high wage (cutters, bushelmen), or by those who are paid a small wage for unskilled work (cleaners, button-sewers).

Taking each of the three main processes, we find the following distribution according to earning capacity and the sanitary condition of the factory:

WAGES OF MALE OPERATORS.

DISTRIBUTION OF WORKERS ACCORDING TO WAGES.

RATE OF PAY	GOOD FACTORY	BAD FACTORY	GOOD FACTORY PER CENT. OF TOTAL	BAD FACTORY. PER CENT. OF TOTAL
Less than \$5.....	3	3	5.0	2.1
\$5-\$9.....	19	22	31.7	15.7
\$10-\$14.....	14	42	23.3	30.0
\$15-\$19.....	14	47	23.3	33.6
\$20 and over.....	10	26	16.7	18.6
Total.....	60	140	100.0	100.0

DISTRIBUTION OF WORKERS ACCORDING TO LENGTH OF TRADE LIFE.

EXPERIENCE	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than 2 years...	13	18	19.1	13.6
2-4 years.....	16	24	23.5	18.2
5-9 years.....	14	32	20.6	24.3
10-14 years.....	7	30	10.4	22.8
15-19 years.....	7	14	10.3	10.6
20-24 years.....	6	10	8.8	7.6
25-29 years.....	5	2	7.3	1.5
30-39 years.....	..	1	..	0.7
40 years and over...	..	1	..	0.7
Total.....	68	132	100.0	100.0

When we come to analyze the relationship between the type of working-place and the wages paid we find that, of 200 male operators, 60 are employed in good factories and 140 in places classed as bad. In other words, the workman is influenced in his choice of a working-place not by the character of the shop, but by other considerations, as we shall show later. In the good factory the largest group is comprised of those receiving from \$5 to \$9 per week; while in the poor factory the largest group is made up of those receiving from \$10 to \$19 per week. Among those earning \$20 and over the percentage is higher also in the poorer type of workshop.

That the experience of the worker has a decided influence in determining the wage is shown in the above table. From this it is seen that 42.6 per cent. of those working in the good factories have had a trade experience of four years or less. On the other hand, in the poorer shops only 27.6 per cent. had a trade life of four years or less. As the trade life extends the number of workers with years of experience is found to be greater constantly in the poorer as contrasted with the good shop.

WAGES OF FEMALE OPERATORS.

DISTRIBUTION OF WORKERS ACCORDING TO WAGES.

WAGES	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than \$5.....	2	..	9.5	..
\$5-\$9.....	16	15	76.2	83.3
\$10-\$14.....	3	3	14.3	16.7
Total.....	21	18	100.0	100.0

DISTRIBUTION OF WORKERS ACCORDING TO LENGTH OF TRADE LIFE.

TRADE LIFE	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than 2 years	9	4	42.9	22.3
2-4 years.....	9	8	42.9	44.5
5-9 years.....	3	5	14.2	27.7
10-14 years.....	..	1	..	5.5
Total.....	21	18	100.0	100.0

The charts relating to the female operators illustrate the influence that experience has on the worker's choice very clearly. Inasmuch as the trade life of the females is much shorter than the males, and also because the beginners predominate in the large factory, more females are employed in the good than in the bad type factory. Although even in this small group the percentage of those with years of experience is higher in the bad than in the good type factory.

WAGES OF PRESSERS.

This group is composed entirely of males—108 in all. The following tables show the relationship between the wages and the character of the work-place and also the relationship between the length of the trade life and the character of the work-place:

DISTRIBUTION OF WORKERS ACCORDING TO WAGES.

WAGES	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than \$5.....	..	2	..	2.7
\$5-\$9.....	9	16	28.1	21.0
\$10-\$14.....	11	22	34.3	28.9
\$15-\$19.....	10	26	31.3	34.2
\$20 and over.....	2	10	6.3	13.2
Total.....	32	76	100.0	100.0

DISTRIBUTION OF WORKERS ACCORDING TO LENGTH OF TRADE LIFE.

TRADE LIFE	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than 2 years	3	7	9.4	9.2
2-4 years	8	13	25.0	17.2
5-9 years	8	17	25.0	22.2
10-14 years	5	18	15.6	23.7
15-19 years	1	11	3.1	14.5
20-24 years	3	5	9.4	6.6
25-29 years	4	2	12.5	2.7
30-34 years . . . . .	..	3	..	3.9
40 years and over . . . .	..	..	..	..
Total	32	76	100.0	100.0

The table on p. 67 shows a slightly larger proportion of those making a small wage in the good factory, while of those making \$15 or over per week the larger proportion is to be found in the poor type of working-place.

The above table shows the distribution according to trade life; while there is a slight excess of those making \$15 per week or over in the bad factory, it is not marked.

Among pressers there does not seem to be the same discrimination in favor of the poor place as was found in the case of the male operators.

WAGES OF BASTERS AND FINISHERS.

This group is composed principally of women, numbering 266, while the men are 62 in number. The following table shows the wages earned in the good and bad type of factory, and the length of the trade life among the males. Except for those earning \$20 or over per week, the bad factory is represented by a slightly higher percentage in those earning over \$10 per week.

In the table showing the length of the trade life it will be seen that those with a trade experience of fifteen years or more predominate in the bad type of factory.

DISTRIBUTION OF WORKERS ACCORDING TO WAGES—MALES.

WAGES	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than \$5 . . . . .	..	1	..	2.2
\$5-\$9	6	9	35.3	20.0
\$10-\$14	5	12	29.4	26.7
\$15-\$19	3	14	17.6	31.1
\$20 and over	3	9	17.7	20.0
Total	17	45	100.0	100.0

WAGES AND TRADE LIFE AS RELATED TO FACTORY CONDITIONS. 69

DISTRIBUTION OF WORKERS ACCORDING TO LENGTH OF TRADE LIFE.

TRADE LIFE	GOOD	BAD	PER CENT. GOOD	PER CENT. BAD
Less than 2 years	2	2	12.5	4.2
2-4 years	3	1	18.7	2.3
5-9 years	2	5	12.5	10.9
10-14 years	4	10	25.0	21.6
15-19 years	2	8	12.5	17.5
20-24 years	2	7	12.5	15.2
25-29 years	1	5	6.3	10.9
30-39 years . . . . .	..	5	..	10.9
40 years and over . . .	..	3	..	6.5
Total	16	46	100.0	100.0

DISTRIBUTION OF WORKERS ACCORDING TO WAGES—FEMALES.

WAGES	GOOD FACTORY	BAD FACTORY	PER CENT. GOOD	PER CENT. BAD
Less than \$5	24	33	21.8	21.1
\$5-\$9	75	98	68.2	62.8
\$10-\$14	11	25	10.0	16.1
Total	110	156	100.0	100.0

DISTRIBUTION OF WORKERS ACCORDING TO LENGTH OF TRADE LIFE.

TRADE LIFE	GOOD	BAD	PER CENT. GOOD.	PER CENT. BAD
Less than 2 years	34	45	30.9	29.5
2-4 years	44	49	40.0	31.4
5-9 years	17	35	15.5	22.4
10-14 years	11	10	10.0	6.4
15-19 years	2	8	1.8	5.2
20-24 years . . . . .	..	4	..	2.5
25-29 years	1	3	0.9	1.3
30-34 years	1	..	0.9	..
40 years and over . . . .	..	2	..	1.3
Total	110	156	100.0	100.0

In considering the female basters and finishers we note again, in comparing them with the males, the discrepancy in the earning capacity of the two sexes. While some of the males are able to earn \$20 or more per week, the extreme limit noted for women was \$14. A second point to be noted is the length of the trade life among the females: after nine years' experience

the number diminishes rapidly, whereas among the males the majority had an experience of ten years or more.

Owing to the relatively short time the women remain in the trade, the distribution in the good and bad type of factory is more uniform. But even here the bad factory has a higher representation both as to those paid the highest wage and those with the longer trade experience.

Owing to the limited number of people employed in the other trade processes, it would not be advisable to draw any general conclusion from their distribution as indicated by the data gathered in this inquiry.

The question naturally arises, why is the large wage paid to those working in the poorer type of factory? In the first place, much of the work is paid for by the piece, and the more the worker accomplishes the more he is paid. Experience counts for a great deal in the ability of the worker to produce sufficient work to obtain a high wage, and as the table on p. 69 shows, the number with years of experience is greater in the poor than in the good type of factory. In addition the small shop offers more opportunity for overtime work because of less stringent rules.

The reason that the experienced worker seeks employment in the poor type of shop is to some extent because he chafes at the discipline imposed in the large factory. Many workers have testified to this, stating that they would not work in a place in which the rules were strict in regards to the time of reporting in the morning and leaving at night. Smoking, which almost invariably prevails in the smaller shops, is, of course, absolutely prohibited in the large factories. Another personal factor also is the relationship which exists between the boss in the small shop and the foreman in the large factory. In the case of the former all are co-workers, and the boss is not considered as a taskmaster to the same degree as is the foreman. Furthermore, in the large, well-organized factory there are less opportunity and need for overtime work because of the larger number of workers employed. Thus, as the worker gains in experience he seeks a place which is to him congenial. And while many do serve their apprenticeship in the poorer places, by far the larger number enter the trade in the large factory.

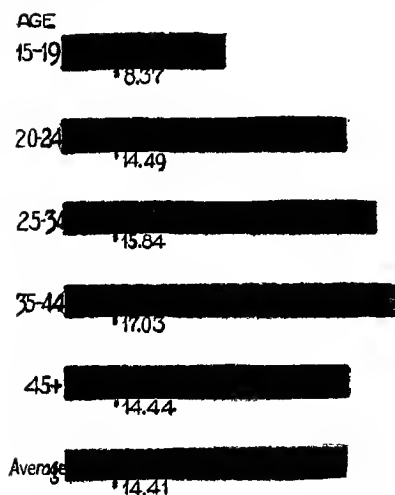
COMPARISON OF WAGES PAID TO MEN AND WOMEN ACCORDING TO TRADE PROCESS AND AGE GROUPS.

That no very material difference in the average wage of the three most important group of workers exists is well shown in the charts II and III. In addition, these charts show very clearly the wide differences between the wages of the two sexes.

It has already been shown that the majority of the employees are dis-

MALES

WEEKLY WAGES ACCORDING TO AGE



DISTRIBUTION OF WAGES ACCORDING TO OCCUPATION

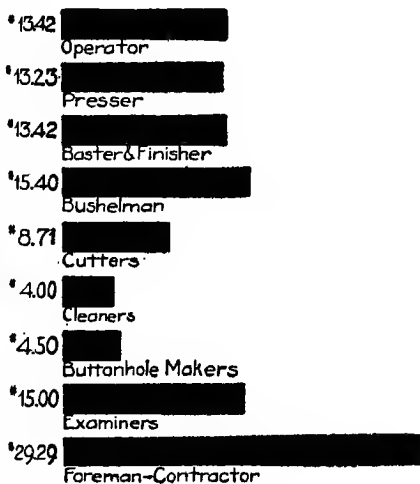
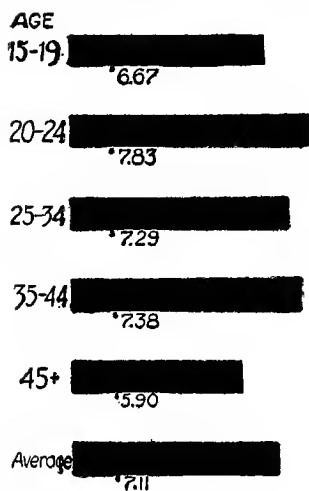


CHART II.

FEMALES

WEEKLY WAGES ACCORDING TO AGE



DISTRIBUTION OF WAGES ACCORDING TO OCCUPATION

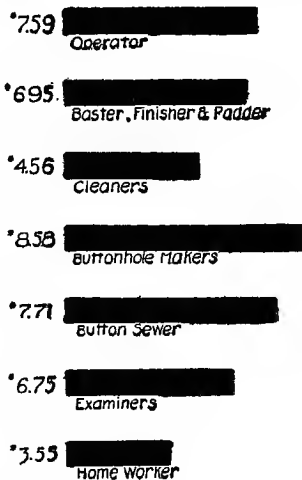


CHART III.

tributed among three of the processes, namely, operating, pressing, and basting and finishing. Among the males the workers designated under one or the other of these headings constitute 91 per cent. of the 402 males studied; among the females, 89.2 per cent. of 341 are employed in one of two processes, operating and basting and finishing.

As is graphically shown in the charts on page 71, the average weekly wage for men in the three main processes is essentially the same—\$13.42 for the operator, \$13.23 for the presser, and \$13.42 for the baster and finisher. This wage for the particular individual is more or less dependent on experience, driving power, and age.

For women doing the same work the operator is paid \$7.59 per week, as compared to \$13.42 for the male; the female baster and finisher \$6.95, as compared to \$13.42 for the male.

The highest wage paid among the men, namely, \$29.29 to foremen, needs no comment. And the same may be said of the wages paid to bushelmen and examiners. The number of employees involved is very small, and in both instances they represent skilled and experienced individuals.

The low wage paid the cutters is explained by the fact that the apprentices are included.

The only process in which the female wage exceeds that of the male was in buttonhole making, and in this division the number of males (2) offers no basis for comparison.

In comparing the wages for age groups it is seen that the earnings of the male gradually increase up to forty-four years of age, when they begin to decline. This is probably due to a loss of efficiency caused by advancing age and the warping of faculties of initiative through the limitations of an habitual trade process.

Among the females the earnings for the different age groups differ very slightly, the maximum wages being paid in the age group from twenty to twenty-four years. Instead of rising, the earnings for the succeeding years are less, reaching the minimum at the forty-fifth year of age.

The average wage per week of the entire group of women is \$7.11, as compared to \$14.41 for the men.

The only adequate explanation that can be given is that the superior physique of the male and his longer experience in the trade enable him to accomplish more work. Doubtless, too, this trade does not differ from other industries in which men and women competing on an equal basis are unequally paid.

INFLUENCE OF ENFORCED IDLENESS AND OVERTIME WORK.

Earlier in the report we called attention to the seasonal character of the trade. Early in the summer and early in the winter there is a lull in the industry, and during these periods the majority of the workers are either laid off entirely or work part time only. The following tables show the amount of enforced idleness during the year. The figures for both the males and females are pretty evenly distributed.

DISTRIBUTION OF 402 MALE EMPLOYEES BY WEEKS OF IDLENESS PER YEAR.

WEEKS	15-19	20-24	25-34	35-44	45+	TOTAL	PER CENT.
Under 2.....	5	3	9	9	10	36	8.95
2-4.....	31	34	44	41	24	174	43.28
4-6.....	7	5	18	19	8	57	14.17
6-8.....	1	7	6	3	2	19	4.72
8-10.....	2	3	12	4	3	24	5.97
10-12.....	..	..	1	..	2	3	.72
12 and over.....	1	3	2	2	2	10	2.48
None*.....	21	10	22	14	12	79	19.65
Total.....	68	65	114	92	63	402	..
Average.....	3.2	4.1	3.9	3.5	3.6	3.7	..

* Excluded in finding average.

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY WEEKS OF IDLENESS PER YEAR.

WEEKS	15-19	20-24	25-34	35-44	45+	TOTAL	PER CENT.
Under 2.....	9	9	1	2	..	21	6.16
2-4.....	79	41	22	8	6	156	46.35
4-6.....	13	11	8	9	2	43	12.61
6-8.....	2	1	2	3	..	8	2.34
8-10.....	5	10	5	1	..	21	6.16
10-12.....	1	2	1	..	..	4	1.17
12 and over.....	3	..	1	2	1	7	2.05
Home worker*.....	..	4	4	2	1	11	20.52
None*.....	39	12	15	3	1	70	..
Total.....	151	90	59	30	11	341	..
Average.....	3 2	3 3	4 ..	4 3	3 4	3 4	....

* Excluded from average.

About one-fifth of each sex had steady employment all the year round—19.65 per cent. males and 20.52 per cent. females. Nearly one-half of each sex were without work from two to four weeks; 14.17 per cent. males and 12.61 per cent. females were idle from four to six weeks, and 13.89 per cent. of the males and 11.72 per cent. of the females were idle two months or longer. When one considers that even when working at full time the great majority receive little more than a bare living wage, it becomes apparent that a complete cessation of work for a period much beyond two weeks is a serious matter.

HOURS OF WORK PER WEEK.

Another bad feature of the trade, and one that results from the seasonal character of the work, is the fact that each period of slackness is followed by one of feverish activity. Partly because the worker wishes to make up what his enforced idleness has cost him and partly because rush orders hurry the manufacturers, overtime work is a fairly common practice, and this occurs most frequently in the poorer type of shop. While there is a law limiting the hours per week for females, namely 54, this is often exceeded.

PIECE WORK AND WAGE WORK.

OVERTIME WORK (MALES, 402).

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Total:						
Wage.....	47	30	64	42	22	205
Piece.....	21	35	50	50	41	197
						402
Overtime:						
Wage.....	21	21	46	24	13	125
Piece.....	10	23	31	29	21	114
						239
Average hours per week in overtime per person, wage...	3.4	4.45	4.0	4.30	6.0	4.43
Hours and minutes, piece	2.4	3.0	6.0	5.6	3.2	4.4

OVERTIME WORK (FEMALES, 330).

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Total:						
Wage.....	89	36	14	6	..	145
Piece.....	62	50	41	22	10	185
Home workers*.....	..	4	4	2	1	11
						341
Overtime:						
Wage.....	31	19	8	2	..	60
Piece.....	33	23	16	9	7	88
						148
Average hours per week in overtime per person, wage...	3.4	6.24	5.0	6.30	..	4.54
Hours and minutes, piece.....	4.1	4.4	4.3	2.18	5.36	4.18

* Piece workers and are excluded in finding averages.

Among the males it is to be noted that the distribution between those working for a weekly wage and those paid by the piece is practically the same, although as the trade life lengthens those doing piece work are in the majority.

Among the females those working for a weekly wage are in the majority in the age group 15-19, but for every age group beyond this those paid by the piece predominate.

Overtime work prevails only during the rush season, and, as a rule, after such a period the worker is laid off or works part time only.

Among the males 59.4 per cent. worked overtime. The amount of overtime work done by the wage group is slightly in excess of the piece workers, while among the females, 44.7 per cent. of whom worked overtime, the piece workers do the most overtime work. The average amount of overtime work for both sexes is about the same, namely, about five hours per week for the wage workers and a little over four hours for the piece workers. It should be borne in mind that the legal limit for women is fifty-four hours, and that this was exceeded in 44.7 per cent. of the 330 women investigated.

Among the males there were 21 instances in which overtime work was notably excessive, namely, from sixty-five to seventy-nine hours per week.

Among the females there were 13 instances in which from sixty to seventy-four hours' work was done.

VACATIONS.

Among the working class the taking of a voluntary vacation during the summer months is not a common practice. The margin between income and the necessities of life is entirely too small to admit of this. In this particular trade there is already too much enforced idleness to admit of many taking a voluntary rest. Still, even among these people a small proportion was noted in which a vacation was taken—among the 402 males, 46 (11.4 per cent.), and among the 341 females, 44 (12.9 per cent.).

SECONDARY EMPLOYMENT.

The following tables show the number who follow a secondary occupation, and also the character of work done. Among the men 344, or 85.5 per cent., did nothing aside from their regular employment, while 58, or 14.5 per cent., were engaged in some other pursuit after working hours. It is interesting to note that 32, or 7.9 per cent., regularly attended night school.

Among the women there is a striking difference when compared to the men—only 84, or 24.7 per cent., were idle after working hours, while 257, or 75.3 per cent., did work of some kind in addition to labor performed in the shop or factory. For the most part the extra labor consisted of housework done on their return home in the evenings. It is to be noted, in addition, that 40, or 14.6 per cent., did sewing, and 29, or 8.5 per cent., attended night school.

DISTRIBUTION OF 402 MALE EMPLOYEES BY SECONDARY EMPLOYMENT.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
None.....	40	55	105	85	59	344
Employment.....	28	10	9	7	4	58
Night school.....	23	7	2	..	..	32
Musician.....	3	1	1	..	..	5
Tailoring.....	1	..	2	2	..	5
Storekeeper.....	1	1	2	4	2	10
Huckster.....	..	1	..	..	..	1
Cigarmaker.....	..	..	1	..	..	1
Fraternal officer.....	..	..	1	..	..	1
Agent.....	..	..	1	1	2	3
Total.....	68	65	114	92	63	402

DISTRIBUTION OF 341 FEMALE EMPLOYEES BY SECONDARY EMPLOYMENT.

	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
None.....	36	35	12	1	..	84
Employment.....	115	55	47	29	11	257
Housework.....	63	39	45	27	11	185
Night school.....	25	4	..	..	..	29
Sewing.....	26	12	1	1	..	40
Fruit picking.....	..	..	..	1	..	1
Photograph shop.....	..	..	1	..	..	1
Home work (baster).....	1	..	..	..	..	1
Total.....	151	90	59	30	11	341

INSURANCE.

The protection of the workers against death, illness, old age, and unemployment is among the most serious of industrial problems that we have in this country. The extent of private insurance, while an indication of a consciousness among the workers of the need for self-protection and the protection of family, represents frequently only an insignificant asset, since the amounts in policies are barely sufficient to cover the cost of a serious illness or burial. The frequency of insurance, therefore, among workers does not actually represent adequate protection against the hazard of work and the unexpected problems arising out of illness and unemployment, whether due to causes for which the worker may or may not be responsible.

The extent of insurance as found in the present inquiry was as follows:

DISTRIBUTION OF 402 EMPLOYEES IN THE PHILADELPHIA CLOTHING INDUSTRY BY KINDS OF INSURANCE CARRIED.

MALES.

KIND OF INSURANCE CARRIED	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Ordinary.....	..	3	8	6	3	22
Industrial.....	4	2	5	1	2	14
Fraternal.....	4	24	68	72	48	216
None.....	60	37	37	17	13	164

FEMALES.

KIND OF INSURANCE CARRIED	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Ordinary.....	..	2	..	1	1	4
Industrial.....	28	9	11	7	3	58
Fraternal.....	1	8	..	4	..	13
None.....	120	71	48	18	7	266
Total.....	151	90	59	30	11	341

The above figures show that the frequency of insurance is 59.2 per cent. among the males as against 22 per cent. among the females. Information concerning the amount of insurance was very difficult to obtain and could not be relied upon.

The following tables indicate the kinds of insurance prevailing among the male and female workers studied:

DISTRIBUTION OF 402 EMPLOYEES IN THE PHILADELPHIA CLOTHING INDUSTRY BY ADDITIONAL KINDS OF INSURANCE CARRIED.

MALES.

KIND OF INSURANCE CARRIED	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Life.....	8	27	73	71	49	228
Accident.....	..	..	3	2	..	5
Sickness.....	3	24	65	68	46	206
Unemployment.....	..	..	1	..	..	1
None.....	60	37	37	17	13	164

FEMALES.

KIND OF INSURANCE CARRIED	AGES					TOTAL
	15-19	20-24	25-34	35-44	45+	
Life.....	29	19	11	12	4	75
Accident.....	..	1	..	..	..	1
Sickness.....	1	6	..	4	..	11
Unemployment.....	..	..	..	..	..	..
None.....	122	71	48	18	7	266
Total.....	151	90	59	30	11	341

In the case of the males it was found that 56.71 per cent. carried life insurance and 51.26 carried sickness insurance. The amount of accident and unemployment insurance was negligible.

In the case of the females it was found that 21.9 per cent. carried life insurance and 3.2 per cent. carried sickness insurance. It is true that this failure of female workers to carry insurance is due in part to a lack of responsibility for the welfare of others; but the chief reason is that their wages are lower and payment means more in proportion to income. The fact, too, that they are not a constant factor in industry affects the interest in insurance.

The fact that 85.8 per cent. of all the male insurance is carried in fraternal orders shows the strong element of race in building up these organizations.

Perhaps no better evidence is possible of the necessity of sick insurance and of its recognition by the American workers than the growing prevalence of sick benefits among the trade unions, which are, after all, organized for a very different purpose.

Throughout the experience of this study the workers anxiously questioned what would become of those found ill and incapacitated for work, and their alarm was communicated to the investigator, who was made to realize the need to understand that a sickness insurance law, even in one state, can do more to eradicate poverty, and is, therefore a greater social gain, than a dozen organizations for scientific philanthropy.

CHAPTER X.

TUBERCULOSIS.

UNSANITARY FACTORY CONDITIONS.—EFFECT OF WORK ITSELF.—WAGES.—LIVING ENVIRONMENT OF WORKERS: CHARACTER OF NEIGHBORHOOD; CHARACTER OF HOME; TUBERCULOSIS IN FAMILY; FOOD; SLEEP.

It may be stated at the outset that there is nothing about the occupation of garment making that is of itself conducive to tuberculosis. This occupation is one of many which are credited with being bad, but which in reality are not, much of the evil that is associated with them being the result of contributory factors which are not directly connected with the work itself. That many who follow the tailoring trade develop tuberculosis there can be no doubt, but as we shall show later, nearly all the factors which are held responsible for the disease involve, in one way or another, a large number of these workers.

In the present study 51 of the 402 males and 21 of 341 females were classed as being tuberculous. According to the figures shown below, the trade process does not seem to have any marked influence. The distribution was as follows:

Male	{	Operators.....	28 out of 200 (14 per cent.)
	{	Basters and finishers.....	7 out of 62 (11.3 per cent.)
		Pressers.....	14 out of 108 (12.9 per cent.)
		Examiners.....	1
		Foremen.....	1
Females	{	Operators.....	2 out of 39 (5.1 per cent.)
	{	Basters and finishers.....	19 out of 266 (7.1 per cent.)

In considering these figures it must be understood that they do not represent active tuberculosis of the lungs. With but few exceptions the individuals classed as having tuberculosis showed abnormal signs at one apex, such as diminished expansion, impairment on percussion, or abnormal breath-sounds. As is well known, these signs may occur in cases of incipient tuberculosis or in cases in which the disease is arrested, the activity having subsided years before. Based on physical signs alone, a distinction between the two cannot be made. In the absence of any symptoms it is assumed that the process is arrested. Such a lesion may, of course, become active at any time, and one is safe in saying that an individual with such

abnormal signs in the chest is in more danger of becoming definitely tuberculous than one whose chest is normal.

It would be impossible to state how many of these individuals had had latent trouble years before, or how many were just about to break down.

Inasmuch as the weight both for the different age periods and for the entire group was the average among the males, and slightly above the average for the females, it can be assumed that the tuberculosis was for the most part arrested or inactive.

The occurrence of cases of this type serves to emphasize the necessity of periodical examination of employees. By doing this the first evidences of the disease could be detected, and to the doubtful ones proper instructions for safeguarding their health could be given. The permanent arrest of tuberculosis is obtained, as a rule, in cases in which the disease is in its very incipency. This is especially true among the working classes, who have no opportunity of sparing themselves on their return to work. When the disease becomes self-evident, its arrest is a difficult matter, and fatal relapses are only too prone to occur when work is resumed. Furthermore, in the case that is at the most suspicious the simplest precautions as to the mode of life are often all that is necessary, while active, manifest disease means enforced rest for an indefinite period.

In order to determine the morbidity rate among garment workers the records of three general hospitals were examined. Out of a total of 32,211 records examined, it was found that 1152, or 3.5 per cent., were garment makers. Of this number 916 were males and 236 were females. Tuberculosis was present in 7.3 per cent. of the males and in 4.7 per cent. of the females.

In addition to studying the records of the hospitals near at hand, letters were sent to all the principal sanatoria and tuberculosis hospitals of the country, asking for the number of garment workers treated during the past five years. The replies received covered a period of from one to seven years. Aside from several large city hospitals and five institutions to be specially mentioned, the average number of garment workers in these institutions was about 3 per cent.

The records from the following five institutions are of special interest:

Montefiore Home, New York	(2 years)	19.57	per cent.
Jewish Sanatorium, Eagleville, Pa.	(5 years)	23.01	" "
National Jewish Hospital, Denver	(1 year)	19.41	" "
Jewish Consumption Relief Society, Denver	(7 years)	31.09	" "
Workmen's Circle, Liberty, New York	(1 year)	40.36	" "

In these five institutions the patients are practically all Jews. The

old belief that the Jew enjoyed an immunity to tuberculosis has been pretty thoroughly dispelled since that race has become a part of modern industrial life and the city slum. In the five institutions dealing exclusively with Jews it is to be noted that from one-fifth to nearly one-half of the patients are garment workers. This fact taken by itself would indicate a tremendous morbidity rate for the trade. But when we recall that nearly three-fourths of the male and one-third of the female garment makers are Jewish, it becomes apparent that this occupation is followed by a larger number of the race than is any other line of work, and hence will have a very high representation. The same results were shown in the figures relating to the general hospitals of Philadelphia. Of the garment workers seeking relief for diseases of all kinds, 81.4 per cent. of the males and 79.3 per cent. of the females were Jewish.

An analysis of 6894 cases of tuberculosis—4139 males and 2755 females—treated at the dispensary and hospital of the Henry Phipps Institute from February 1, 1903, to February 1, 1912, shows that 434, or 10.9 per cent. of males, and 191, or 6.9 per cent. of females, were engaged in the clothing industry. During the first seven years of this period the Institute received patients from all over the city of Philadelphia and the adjacent vicinity. Since the fall of 1910 patients have been taken from a restricted area which contains a large proportion of the Jewish population of the city. For the year 1913 a positive diagnosis of tuberculosis was made in 685 new patients; of this number 14 per cent. were garment makers.

In other words, any institution which treats a large number of Jews, no matter what the complaint is, will have a very high proportion of garment workers for the reason that the majority of the race are so employed.

UNSANITARY FACTORY CONDITIONS.

If the worker's trade life was confined to one factory or to several factories of the same type, we would be in a position to form a fairly accurate judgment as to the effect the sanitary condition of the shop had on the health of the employees. That this can rarely be done in the individual case is due to the fact that the workers shift from factory to factory—sometimes from a bad to a good one, and vice versa. Any one who has been in the trade for any length of time, however, is apt to have been subjected to all sorts of sanitary conditions. In the group which we have studied it was found at the time of the investigation that the ventilation was open to criticism in 19 of 43 of the shops; there were no wash-rooms in 39, and in 34 the toilets were either unsanitary or unclean. Cuspidors were provided in but 2 of the 43 shops. In the majority of the workshops there was little

evidence of any attempt at cleanliness, especially in unused portions of the room, where very often the dirt and rubbish evidently represented the accumulation of months.

We encountered but one instance in which the evidence was direct that tuberculosis might be transmitted from worker to worker in the shop itself. This was a small contract shop consisting of six workers. The presser had advanced tuberculosis with cavity formation. Investigation of the corner in which he worked showed that he constantly expectorated on the floor.

EFFECT OF THE WORK ITSELF.

Anything which lowers the individual resistance may cause to become active a tuberculous focus which was implanted years before. In this way certain occupations may play a part if the work is arduous in character, if the hours are unduly long, or if the work is carried on amid unsanitary conditions.

Garment making may be made arduous if the worker has to work at top speed. This is usually recognized as one of the bad features of the trade, and is most noticeable among the operators. Work carried on in this way leads to fatigue, and if this occurs constantly, may impair the individual's vitality.

Working unduly long hours may bring about the same results. For women fifty-four hours per week are prescribed by law as the limit. In spite of this, however, we found that 148 out of 330 women employed in the factories worked overtime—four hours and fifty-four minutes for those paid a weekly wage and four hours and eighteen minutes for those doing piece work. Among the men the figures were nearly the same—four hours and forty-three minutes for the wage workers and four hours and four minutes for the piece workers. As the trade is seasonal in character, the hours per week during the rush season often greatly exceed these figures. In this way six weeks or two months of excessively long hours working at top speed could readily produce a breakdown in health.

We have already alluded to the sanitary conditions of the shops in which this work was done.

WAGES.

There are some who believe that an adequate wage would do much to eliminate tuberculosis as a factor. This factor alone might minimize the incidence of the disease, but would hardly remove it entirely. So far as the garment-making industry is concerned, the wage is often inadequate, and

very frequently when it is sufficient it is earned at the expense of great labor, while during the dull season the worker is either laid off entirely or works part time. As a result of this the wage per week varies greatly. Entirely apart from the uncertainty of what the wage per week will be, there is no doubt that the worker's health would be less endangered if the work were evenly distributed throughout the year.

LIVING ENVIRONMENT OF THE WORKER.

(a) *Character of the Neighborhood.*—We have shown that the length of the trade life of the workers studied coincided almost exactly with the length of time they had lived in this country. This means that the workers are recruited almost entirely from the newly arrived immigrants. These people, particularly the Jews, land with little or no money, and as a result are forced to seek the cheapest and poorest quarters of the city. From the very beginning of their trade life, therefore, they live amid unsanitary conditions. Later, if they prosper, they move to better localities, but for the majority at all times the neighborhood environment is apt to be bad. The fact that both the morbidity and mortality rates of tuberculosis are always highest in such localities needs no comment.

(b) *Character of Home.*—The type of house occupied by the 402 males was classed as poor and lacking in the proper sanitary facilities in 72 instances (17.9 per cent.). Among 341 females the home was classed as being structurally bad in 101 instances (29.6 per cent.).

As to hygiene of the people themselves, 184 of 402 males (45.7 per cent.) were classed as clean; among 341 females the percentage was 39.6 per cent.

In regard to overcrowding we find that the 51 male cases with abnormal signs in the lungs show the following distribution: less than 2 persons per room, 13.3 per cent.; 2 and less than 3 per room, 12.5 per cent.; and 3 and over per room, 8 per cent.

Among 21 females there were less than 2 per room in 4 per cent., and 2 and less than 3 per room in 7.8 per cent. There was no instance of 3 or more per room among the females.

While the data relating to housing conditions does not indicate a specific influence on the occurrence of tuberculosis in this group, they do point to a large proportion of unsanitary conditions which must, in the long run, bring about a deterioration in health.

(c) *Tuberculosis in Family.*—So far as this group is concerned, tuberculosis in other members of the family was encountered in 27, or 6.7 per cent. of the 402 males, and 13, or 3.8 per cent., of the females. The question of whether the worker is exposed to the disease in the home or has a family

history of tuberculosis is extremely important. When such is the case, it would be difficult to fasten the blame on the occupation. During the year 1913 there were treated in the Phipps Institute Dispensary 685 cases with a positive diagnosis of tuberculosis, and of this number 96, or 14 per cent., were garment-makers. Twenty-seven, or 28 per cent., of the 96 had a family history of tuberculosis. Furthermore, the social histories of patients with tuberculosis but following an occupation other than that of garment-making showed that in 108 instances one or more members of the family were employed as garment makers. It is thus seen that the worker is often exposed to the danger of infection in the home.

(d) *Food*.—In the figures relating to the question of food it was found that among the males 18.5 per cent. of those getting insufficient food had a tuberculous lesion, while of sufficiently fed only 11.4 per cent. had a lesion.

Among the females 17.7 per cent. insufficiently fed had a lesion, while of those getting sufficient food only 3.9 per cent. had a lesion.

(e) *Sleep*.—The amount of sleep obtained had no apparent difference so far as the males were concerned, the percentage being 12.7 per cent. for sufficient and 12.5 per cent. for insufficient. Among the females, however, there was a marked difference, a pulmonary lesion being present in 13 per cent. of those with insufficient, compared to 4.5 per cent. getting sufficient, sleep.

(f) In considering the question of *intemperance* we pointed out the difficulty of estimating an excessive use of alcohol from the worker's word alone. To what extent alcoholism has a bearing on the incidence of tuberculosis in this industry is problematical.

CHAPTER XI.

FATIGUE.

EXPERIENCE OF FATIGUE ACCORDING TO TIME OF DAY.—RELATION OF FATIGUE TO AGE OF WORKERS.—RELATION OF FATIGUE TO TRADE PROCESS.—RELATION OF FATIGUE TO NATIONALITY AND NUMBER OF HOURS' WORK PER DAY.—EVIDENCES OF FATIGUE AS SHOWN IN HOSPITAL AND DISPENSARY RECORDS.

In considering the subject of fatigue as related to the garment-making industry, it is necessary to realize that we are dealing with a condition that admits of measurement only with the greatest difficulty. The present teaching regarding fatigue is that overuse of a muscle or group of muscles results in the accumulation of waste-products and the consumption of energy-yielding substances, such as glycogen and oxygen. These chemical changes are brought about by stimulation of the muscle. The more prolonged the stimulation, the greater the chemical change, until finally the muscle fails to respond at all. The loss of vigor in the contraction corresponds to the beginning of fatigue, the latter increasing and passing finally into exhaustion if the stimulation is continued sufficiently long. Furthermore, the accumulation of waste products and the consumption of substances essential for activity react on the nervous system, with the result that impulses are imperfectly transmitted from the brain to the muscles. These observations, while for the most part the result of laboratory investigation, have been shown to be true also for muscular exertion, as encountered in the performance of various occupations. Assuming that the individual is physiologically sound, and that he starts the day well rested from the previous day's labor, the degree of fatigue experienced at the end of the day will necessarily vary for each individual. Work, as Déjérine has well put it, consists of four parts: (1) The getting started. (2) The automatic performance of the task. An individual in good physical condition who is thoroughly familiar with his work and who, in addition, has an interest in his task, practically works automatically. Brain and muscle are perfectly co-ordinated, and the work is done without conscious effort. (3) Voluntary effort. After a variable time the worker becomes conscious of his work, and this is probably the first evidence of fatigue. Work under these circumstances can be done efficiently and without harm. If persisted in, however, the fatigue becomes more and more pronounced, until (4) the stage of exhaustion is reached.

While muscular fatigue can be produced under the most favorable conditions, the tendency to fatigue increases in proportion to the number of unfavorable factors associated with the work or the life of the worker. These unfavorable factors are of three kinds: (1) Those related to the work itself, such as speed, piece work, overtime, monotony, and the noise of machinery. (2) Those related to the working environment, such as faulty ventilation, which leads to undue heat and humidity; faulty lighting, which induces eye-strain and headaches; and bad sanitary conditions in or about the working-place. (3) The physical status and habits of the worker. This phase of the subject has not received the attention it deserves. It must be obvious to any one, however, that an individual in poor physical condition will succumb to fatigue sooner than the one who is healthy. It must be equally obvious that the individual who is poorly fed, who gets insufficient rest, and who lives amid bad sanitary conditions will become a victim to fatigue sooner than the worker of whom the reverse is true. And if to these factors dissipation is added to the list, the deterioration of working efficiency is inevitable.

It must be remembered that this trade is one in which each group of workers is engaged in a single operation. This is paid for by the piece, or if a fixed weekly wage is paid, a certain amount of work must be performed. In both cases "speeding up" is a common practice: in one instance, to earn as much as possible, in the other, to accomplish a fixed task. That fatigue can be produced by the frequent repetition of a given movement or series of movements has been proved in the physiological laboratory. A realization of what this means in this industry must be apparent to any one who has witnessed the almost ceaseless rapidity with which the woman finisher or baster plys her needle or the operator sews sleeve after sleeve into coats. The number of times a day, week in and week out, that this same series of movements is repeated must produce fatigue if the relatively brief laboratory experiments can produce the condition.

In each case an effort was made to ascertain whether fatigue was experienced, and if present, the time of day when it was first noted.

These factors are correlated with those of race, age, sex, trade process, and working hours per diem.

EXPERIENCE OF FATIGUE ACCORDING TO TIME OF DAY.

Of the 402 males studied, the experience of fatigue according to time of day was distributed as follows:

	NO.	PER CENT.
No fatigue.....	129	32.1
Early part of day.....	40	9.9
Middle of day.....	108	26.9
End of day.....	125	31.1
Total.....	402	100.0

The following figures were obtained among 339 females:

	No.	PER CENT.
No fatigue.....	148	43.6
Early part of day.....	24	7.1
Middle of day.....	90	26.6
End of day.....	77	22.7
Total.....	339*	100.0

* Two not classified.

Among the men, fatigue is encountered most frequently as the working hours lengthen. Among the females the figures for the middle and the end of the day are practically the same.

RELATION OF FATIGUE TO AGE OF WORKER.

The following tables show the relationship existing between the time of the fatigue and the age of the individual:

MALES.

AGE	NO FATIGUE		EARLY IN DAY		MIDDLE OF DAY		END OF DAY		TOTAL ALL AGES
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	
15-19.....	39	30.2	5	12.5	12	11.1	12	9.6	68
20-24.....	24	18.6	9	22.5	12	11.1	20	16.0	65
25-34.....	34	26.4	7	17.5	29	26.9	44	35.2	114
35-44.....	19	14.7	11	27.5	36	33.3	26	20.8	92
45 and over ..	13	10.1	8	20.0	19	17.6	23	18.4	63
Total ...	129	100.0	40	100.0	108	100.0	125	100.0	402

FEMALES.

AGE	NO FATIGUE		EARLY IN DAY		MIDDLE OF DAY		END OF DAY		TOTALS ALL AGES
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	
15-19.....	70	47.3	8	33.3	40	44.5	31	40.3	149
20-24.....	37	25.0	9	37.5	25	27.8	20	25.9	91
25-34.....	25	16.9	5	20.8	14	15.5	14	18.2	58
35-44.....	13	8.7	2	8.4	8	8.8	7	9.1	30
45 and over ..	3	2.1	..	..	3	3.4	5	6.5	11
Total * ..	148	100.0	24	100.0	90	100.0	77	100.0	339

* Two not classified.

It will be noted that among the males fatigue is encountered most frequently up to the thirty-fifth year. For some reason the age group 25-34 shows the highest percentage. The high incidence of fatigue at this period among the males is not easy to explain. A possible assumption is that the great majority of the males are operators and pressers; the former process involves speeding up and the latter is laborious work, and in addition the workers are on their feet all day. As we shall show later, the pressers are more subject to fatigue than the others.

Among the females the table shows clearly that the younger the worker, the higher the percentage of fatigue. Thus in the age group 15-19 nearly one-half suffer from fatigue. This is not surprising, and quite what one would expect in young girls, many of whom are far from robust on entering the trade.

RELATION OF FATIGUE TO TRADE PROCESS.

The following tables show the relation of fatigue to the trade process:

MALES.

TRADE PROCESS	NO FATIGUE		EARLY		MIDDLE		END		TOTALS
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	
Operator . . .	72	36.2	20	10.0	54	27.0	54	27.0	200
Presser	22	20.4	13	12.0	30	27.8	43	39.8	108
Baster and finisher . . .	30	48.4	5	8.0	14	22.5	13	20.9	62
Totals* . .	124	33.5	38	10.2	98	26.5	110	29.7	370

* One not classified.

FEMALES.

TRADE PROCESS	NO FATIGUE		EARLY		MIDDLE		END		TOTALS
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	
Operator . . .	17	43.6	3	7.7	11	28.2	8	20.5	39
Baster and finisher . . .	113	42.5	17	6.6	70	26.6	64	24.3	264*
Buttonholes . .	11	47.8	4	17.4	5	21.7	3	13.1	23
Totals . .	141	43.3	24	7.4	86	26.3	75	23.0	326†

* Two not classified.

† Home workers and cleaners not included.

These tables are interesting as they show that among the males the pressers are most subject to fatigue. This is due in part to the laborious character of the work, and in part to the fact that the workers are on their feet all day. We shall point out later that occupational neuroses seem to be more prevalent among the workers in their trade process than among the others.

Next to the pressers the operators show the highest percentage of fatigue. This is due doubtless to "speeding up," which is more noticeable in this process than in any of the others.

Among the women there is no noticeable difference in percentage. But if we consider the total number showing fatigue, we find that a little over one-half of those employed in each process experience fatigue. Inasmuch as the table relating to age and fatigue showed that the majority of those who tired from the work were among the young girls, it would seem that age rather than the trade process was the important element in determining fatigue among the women.

RELATION OF FATIGUE TO NATIONALITY AND NUMBER OF HOURS' WORK PER DAY.

The following tables show the distribution of fatigue according to the nationality, and also the influence that the number of hours' work per day has on its production:

MALES.

	HOURS PER DIEM															
	9				9-10				11-12				13+			
	No.		Per Cent.		No.		Per Cent.		No		Per Cent.		No.		Per Cent.	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hebrew	4	1	80.0	20.0	77	188	29.7	70.3	2	26	7.1	92.9	..	2	..	100.0
Italian .....	..	..	..	..	13	32	28.9	71.1	..	2	..	100.0	..	..	..	..
Lithuanian .....	..	..	..	..	32	20	61.5	38.5	1	..	100.0	..	..	..	..	..
Totals*	4	1	80.0	20.0	122	240	33.7	66.3	3	28	9.7	90.3	..	2	..	100.0

* Two not classified according to nationality.

FEMALES.

	HOURS PER DIEM															
	9				9-10				11-12				13+			
	No.		Per Cent.		No.		Per Cent.		No.		Per Cent.		No.		Per Cent.	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Hebrew.....	4	3	57.1	42.9	40	68	37.1	62.9	..	2	..	100.0	..	..	..	..
Italian.....	16	5	26.2	23.8	61	76	44.5	55.5	..	4	..	100.0	1	1	50.0	50.0
Lithuanian.....	1	1	50.0	50.0	26	28	48.1	51.9	1	1	50.0	50.0	..	..	..	..
Totals*.....	21	9	70.0	30.0	127	172	42.5	57.5	1	7	12.5	87.5	1	1	50.0	50.0

* Two not classified.

Although the numbers are not large, it is interesting to note that among those working nine hours or less instances of fatigue are much less frequent than in the groups working for a longer period. Thus, of 31 males and 8 females working eleven to twelve hours, nearly all suffered from fatigue.

The great majority of the workers were employed from nine to ten hours a day. As a race, the Lithuanians, both males and females, seemed to be the least affected.

EVIDENCES OF FATIGUE AS SHOWN IN HOSPITAL AND DISPENSARY RECORDS.

In addition to ailments which seemed to be attributable to the trade itself, it was found that muscular strain was complained of by 78 of the 402 males and 47 of the 341 females intensively studied. Headache was noted among 43 of the males and 95 of the females.

The hospital records, already alluded to in a previous part of the report, also revealed some interesting data relating to fatigue. The condition most frequently encountered was neurasthenia. After giving due allowance to the laxity which prevails in the use of this term, and the large percentage of Jews represented among the patients, it is a reasonable supposition that in a great many instances the diagnosis was correct if the term neurasthenia can be used to imply nervous exhaustion. The condition was noted as having occurred in 147 of 916 males (16.2 per cent.), and in 90 of 236 females (38.2 per cent.). It is more than likely that among those who complain, from time to time, of muscular strain, headache, etc., while at work, the condition, in many instances, develops into nervous exhaustion sufficiently marked to be designated neurasthenia. It is claimed by some

that an occupational neurasthenia is not of infrequent occurrence, and that the nervous exhaustion can usually be shown to be due to some trade process. In many instances either the trade process itself predisposes to fatigue or the conditions under which the work is done contribute largely to that end.

In some cases the muscular strain either becomes chronic or the pain becomes sufficiently severe to cause the worker to seek relief. Among the hospital cases studied 40, or 4.4 per cent., of the males, 8, or 3.4 per cent., of the females, were designated as suffering from myalgia. In addition 41, or 4.5 per cent., of the males and 8, or 3.4 per cent., of the females had chronic muscular rheumatism. While the latter term should not be used, it is often employed to indicate painful affections presumably muscular in origin.

In addition to the affections noted above, the hospital records showed that among the 916 males 52, or 5.7 per cent., suffered from neuritis or occupational neuroses; among the 236 females 4, or 1.7 per cent., were so designated. While the majority of the cases were diagnosticated as having neuritis, it is more than likely that in most instances they had an occupational neurosis rather than true neuritis. Among the 52 instances encountered among the males, it is interesting to note that just one-half were pressers. If in each case the exact trade process had been indicated rather than the use of the general term "tailor," it is quite probable that the number of pressers would have been even greater. It will be recalled that in the table showing the relation between fatigue and the trade process the pressers were most subject to that condition. Evidently in not a few instances the fatigue of certain muscle groups becomes sufficiently marked to constitute a true occupational neurosis.

In considering the relation of tuberculosis to the trade we considered in detail the various factors which might contribute to the condition. This analysis showed that the morbidity rate of tuberculosis was dependent on two general conditions: (1) The conditions under which the trade is operated, plus the working environment, and (2) the home environment and the general habits of the worker.

These two factors also determine to a great extent, the occurrence of fatigue. Briefly summarized they are as follows: (1) An irregular wage, overtime, "speeding up," unhygienic working environment. (2) Unsanitary neighborhood, overcrowding, unhygienic housekeeping, insufficient and irregular meals, insufficient sleep, intemperance.

CHAPTER XII.

REPORT OF EYE CONDITIONS ENCOUNTERED AMONG "PRESSERS."

BY T. B. HOLLOWAY, M.D.,
Consulting Ophthalmologist to the Phipps Institute.

In making this brief report it should be understood that at the time this investigation was undertaken it was not the intention to consider in detail the ocular condition of these workers. As the work progressed it was noted by Miss Reed that many of the pressers seemed to be predisposed to "red eyes," and at the suggestion of Dr. Landis I undertook the examination of a number of cases in order to determine the character and extent of this inflammation. After seeing several of these cases it seemed worth while at least to record the other ocular conditions encountered, although no exhaustive examination was attempted. In all, 21 cases were seen, too few for statistical purposes, but still sufficient to satisfy the original intention of the examination, and as the results and personal investigation of several of the shops determined, enough to convince one that many of these individuals were performing their duties under definite ocular difficulties. The 21 cases examined were all noted to have had "blood-shot eyes" at one time or another while at work. The examinations were made in the evenings at the Phipps Institute.

The only irritative conditions found were those affecting the lids and the conjunctiva; these were classified as follows: mild catarrhal conjunctivitis in 6 cases; blepharitis in 3; blepharoconjunctivitis in 1; hyperemia of the conjunctiva, including bulbar, in 8. In other words, only 3 cases failed to show some irritation of these structures. As to the ages of those examined, 9 were under forty, and of these, 3 wore glasses; 12 were over forty, and 8 wore glasses, but 6 of these for reading only. In 3 that were over forty and one under forty no facts concerning glasses were obtained.

The visual tests showed that but one man had normal vision with each eye, while but four had approximately normal vision with one eye. Five were doing their work with practically one eye; in two instances due to anisometropia, the one eye being highly myopic; the other three had cataracts, in two instances traumatic in origin. In the remaining cases, with the exception of two where the vision was not tested, the visual acuity varied

from one-half to one-seventh of normal. It should be stated that in two cases there were slight opacities of the cornea in one eye.

Few, if any, of those who wore glasses had availed themselves of the privileges of the many good eye dispensaries at their disposal, but had picked up glasses at some shop in their immediate neighborhood, and as a consequence were doubtless wearing glasses quite unsuited for their eyes. It is a fact long recognized by ophthalmologists, and in late years becoming more appreciated by the laity, that ametropic eyes or eyes improperly refracted are predisposed to just the character of conditions here cited, especially when reinforced by the other conditions surrounding these cases.

The several shops I visited—and I understand they were among the worst—were deplorable from the point of view of ocular hygiene. In certain instances long narrow rooms were lighted solely by windows from the ends; the walls were dark and dirty; and many of the men were working in the most unfavorable positions, and during the colder months adequate ventilation is inconceivable.

In their work the pressers use large irons heated from within by numerous gas-jets. How much of the irritation can be traced to the constantly rising heat and steam, as well as to the possible irritating effects of the products of combustion, it is impossible to say, but these undoubtedly constitute contributing factors, for conjunctival irritation is frequently seen in other trades where dust, heat, steam, and similar irritants are constantly present.

With these brief statements I think it may be assumed that three factors were probably present: (1) Errors of refraction or improperly corrected errors; (2) inadequate and improper lighting facilities; (3) certain irritants dependent upon the occupation itself.

The first of these can be readily corrected, but unfortunately most of these workers belong to a class difficult to reach, even by the slow methods of education of one sort or another. On the other hand, certain trade and other conditions doubtless influence some of these men against the constant use of glasses. It is a well-known fact that many tradesmen believe that the wearing of glasses jeopardizes their chances for securing employment, and I know of instances where apparently this was the only excuse for the rejection of the applicant. Another possibility is that pressers, from the character of their work, would be subjected to the constant annoyance of "steamy" lenses.

The second condition, like the first, is amenable to correction, and should be given due consideration by factory inspectors. However, inspection that can overlook some of the other conditions existing in some of

these shops could hardly be expected to take cognizance of improper lighting.

The third condition, although it might possibly be improved, must be regarded as one of the incidents or risks of the occupation, such as is prevalent in all our trades or professions. Fortunately, the time is near at hand when adequate protection of the tradesman against injury will be appreciated as a valuable asset to all employers and employees as well.

CHAPTER XIII.

CONCLUSIONS AND RECOMMENDATIONS.

CONCLUSIONS.

A serious difficulty encountered in this study was the absence of a comparative material upon which to base conclusions in keeping with generally accepted standards. We are, therefore, forced to admit that whatever evidence was considered conclusive in the light of the data gathered is subject to such verification as an increase in the field of inquiry along the lines followed in this report may render possible, and the application of similar methods to other trades and occupations.

A general statement of the conclusions reached is herein given:

1. With few exceptions, the condition of the factories left much to be desired in point of safety and sanitation, and compliance with the provisions of the state laws.

2. While the living conditions did not appear to have a very striking bearing upon the susceptibility of the workers to the effects of the trade processes as expressed in terms of trade illnesses, it is to be borne in mind that we were dealing with a group at work, and that the influence of bad home conditions might manifest itself at any time.

3. The effects of personal hygiene, nutrition, and sleep, however, appear to bear directly upon the extent of illness among both male and female workers, and especially among the females.

4. When we consider the trade processes we find that the pressers among the males were more susceptible to general illnesses that may be attributed to trade process, particularly a highly inflamed condition of the eyelids or conjunctivitis and occupational neuroses. This greater frequency of ill health among pressers increases with advancing age.

5. There is a greater frequency of illness due to trade processes among males than among females.

6. The illnesses resulting from muscular strain were found to be more common among the males than among the females, but this was due to the character of trade processes in which the two sexes are engaged.

7. "Colds" and other general ailments due to conditions of employment and low standards of living were found more frequently among the females than among the males.

8. It is clear, in so far as the evidence gathered in the present inquiry is concerned, that the earnings per worker are higher in the factories in which the sanitary conditions are below standards. Our analysis of the figures relating to trade life, however, shows that the trade life of the worker in the poorer shops is longer, and therefore it is to be presumed that a greater average experience prevails. The finer subdivision of labor in the larger factories would affect the need for wider experience and a consequent higher wage rate.

9. A larger proportion of female workers in those factories classified as bad, receive wages below five dollars per week and ten dollars and over than in the good factories.

10. The wages in the principal trade processes considered in this industry average, in the field covered, practically the same in the three processes—operating, pressing, and basting and finishing.

11. The highest industrial efficiency, as indicated by average wages among the males, is found between thirty-five and forty-four years of age, after which the average wage decreases.

These conclusions represent the principal evidence brought out by this inquiry, and suggest certain practical steps in the methods of collecting statistical data, the methods of factory inspection, and other lines of activity which are here presented.

RECOMMENDATIONS.

A recent writer in the *American Journal of Public Health* has said: "Industrial disease is a misleading term, used for convenience only, or through ignorance, to indicate certain pathological states, the result of insanitation in industry. Industry itself is never necessarily unwholesome. Industrial processes, it is true, are objectionable and crude, oftentimes, but bad industrial conditions are always remediable."

In European countries a great deal of careful investigation has been made concerning the influence of certain industries upon the health of those engaged in them.

We believe that it is legitimate for an employer to insist that every person who works in his factory shall be examined before he is given employment. But how many of these consider this an essential factor in production—not to mention its ethical significance?

On the other hand, we believe that employees have the right to insist that one of their number who has a chronic cough shall be examined for evidence of pulmonary disease if they are to continue work with him.

Probably the healthiest body of workers in the United States is to be

found in the army and navy. When a man applies for enlistment in either of these services he is first subjected to a careful physical examination, not with part of his clothing on, but with all his clothing removed. Work in the army and navy, so far as the development of disease is concerned, is no more dangerous than work in a steel plant, a brass foundry, or many another industrial plant.

In a discussion on industrial diseases held jointly by the American Association for Labor Legislation and the American Medical Association in Atlantic City in 1912 the Surgeon-General of the navy said: "We have been looking after occupational diseases in the navy, but entirely on the basis of military efficiency. There is no humanitarian factor in it."

Why should not a manufacturer look after the health of his employees entirely on the basis of industrial efficiency?

Chicago's pioneer experiment through several corporations interested in the health of their employees, requiring periodic examinations of all employees, promises to be of unique value. If a certificate of health were required before entering a trade, the subsequent medical history of employees might be studied and the occurrence of diseases among them could be recorded and investigated as to their relation to the work and to the habits of employees when not working.

Some one will want to know what provision would be made, under such a scheme, for the employment of those men who present certain physical defects when they apply for work. Under such a system it might be possible for patients with heart and lung disease to be given suitable employment, and not set to work at tasks too great for them, as is now very frequently the case. Such an inquiry, undertaken in each industry, would be productive of much valuable information concerning the effects of industry on health.

For the best results such an inquiry—industry by industry—should be undertaken by the State Department of Health conjointly with the State Department of Labor as an integral part of its administrative program.

For the proper study of the effect of occupation on health each state should have an adequate body of field workers and trained physicians whose supervising authority in the interest of the entire community should be the central health authority of the state—the State Board of Health.

That such a system is logical and practical has been amply shown by the work of the Massachusetts Board of Health during the last nine years. It remains for us to recognize the fact that the inspection of industrial establishments by well-trained medical men under the supervision of a board

whose duty it is to study the health of the community in the broadest sense—the State Board of Health—means the promotion of public health.

The hygiene of occupation conducted within industrial establishments is an important part, but only a part, of the hygiene of the community. Moreover, with the exception of those occupations which are intrinsically dangerous to health by reason of the nature of materials involved, intelligent conclusions as to the effect of work conducted in the industrial establishments cannot be reached without some knowledge of the home and community life of the worker.

To summarize:

1. The most urgent requirements for the needs of industrial hygiene in the United States are accurate and complete records of industrial diseases and industrial accidents, and voluntary or compulsory reports thereof should be made to either the State Bureau of Labor or the State Board of Health.
2. The forms or blanks required for compulsory or voluntary notification should be agreed upon by a national committee, and, as far as practicable, such forms should be uniform for all states.
3. The mortality and morbidity experience of life insurance companies by occupation should be made public.
4. The experience data of hospitals, dispensaries, workmen's benefit societies, and the sickness departments of national and local labor organizations would also prove a valuable addition to the present very limited amount of trustworthy information regarding the morbidity in representative industries.

Here, too, the forms and blanks required for this purpose should be agreed upon by a national committee representing the hospital and medical associations of America.

APPENDIX

PREPARED BY J. S. REED

TRADE STUDY CARD

THE UNIVERSITY OF PENNSYLVANIA THE HENRY PHIPPS INSTITUTE

INQUIRY BLANK A

NAME _____ ADDRESS _____

PERSONAL RECORD

1. SEX _____
2. AGE _____
3. COUNTRY OF BIRTH _____
4. COUNTRY OF BIRTH OF MOTHER _____
5. RACE _____
6. YEARS IN U. S. A. _____
7. YEARS IN PHILADELPHIA _____
8. MARRIED, SINGLE, WIDOWED OR DIVORCED _____
9. NUMBER OF PERSONS IN HOUSEHOLD _____
10. AGES UNDER 14 _____
11. AGES 14 AND OVER _____
12. GENERAL HEALTH OF FAMILY _____

OCCUPATION AND WAGES

13. INDUSTRY EMPLOYED IN _____
14. EXACT OCCUPATION NOW FOLLOWED _____
15. FORMER OCCUPATION FOLLOWED IN DETAIL _____

16. WAGES, OR PIECE WORK _____
17. WAGES EARNED LAST YEAR \$ _____
18. WAGES, PRESENT EARNINGS PER WEEK, \$ _____
19. EMPLOYMENT; STEADY, IRREGULAR OR CASUAL _____

SECONDARY EMPLOYMENTS _____

HOUSING CONDITIONS _____

20. NUMBER OF ROOMS OCCUPIED _____
21. FLOOR OCCUPIED; 1ST, 2ND, 3RD, ETC. _____
22. RENT PAID PER MONTH _____
23. FACILITIES FOR VENTILATION OF BEDROOMS; GOOD, FAIR, POOR _____
24. WATER SUPPLY; ACCESSIBLE OR DIFFICULT _____

EDUCATION AND ECONOMIC CONDITION

25. EDUCATION; AGE AT LEAVING SCHOOL _____
26. EDUCATION; GRADE AT LEAVING SCHOOL _____
27. AGE AT BEGINNING WORK _____
28. INSURANCE; LIFE, ACCIDENT, SICKNESS, UNEMPLOYMENT _____
29. INSURANCE; REGULAR, INDUSTRIAL, FRATERNAL _____
30. MEMBERSHIP IN LABOR ORGANIZATIONS _____
31. VOCATIONAL TRAINING, TECHNICAL, IF ANY _____
32. HOURS OF WORK DAILY; BEGIN; _____ END, _____ TOTAL _____ HOURS
33. HOURS OF WORK SATURDAY; BEGIN; _____ END, _____ TOTAL _____ HOURS PER WEEK
34. HOURS OF WORK SUNDAY; BEGIN _____ END, _____ TOTAL HOURS PER WEEK _____
35. TOTAL WEEKLY WORKING TIME; _____ HOURS
36. OVERTIME; _____ HOURS PER WEEK; _____ WEEKS PER ANNUM _____
37. REST TIME AT NOON; _____ MINUTES _____
38. VACATION TIME PER ANNUM; _____ WEEKS _____
39. IDLENESS PER ANNUM; _____ WEEKS _____

WORKSHOP CONDITIONS

40. WORK DONE BY HAND OR MACHINERY _____
41. MACHINERY EQUIPMENT; SAFETY OR DANGEROUS _____
42. CONDITION OF WORKSHOP; LIGHT, NATURAL OR ARTIFICIAL _____
43. CONDITION OF WORKSHOP; LIGHT, SUFFICIENT OR INSUFFICIENT _____
44. CONDITION OF WORKSHOP; LIGHT, ELECTRIC, GAS, OIL LAMPS, ETC. _____
45. CONDITION OF WORKSHOP; DUST, MUCH OR LITTLE _____
46. CONDITION OF WORKSHOP; DUST, METHODS OF REMOVAL _____
47. CONDITION OF WORKSHOP; LIABILITY TO ACCIDENT _____
48. CONDITION OF WORKSHOP; FIRE RISK, SMALL OR SERIOUS _____
49. SANITARY CONDITIONS, ETC., FIRE ESCAPES, SUFFICIENT OR NOT _____
50. SANITARY CONDITIONS, ETC., FIRE DRILL, PRACTICED OR NOT _____
51. SANITARY CONDITIONS: DRESSING-ROOM FOR EMPLOYEES: YES OR NO _____
52. SANITARY CONDITIONS: LUNCH-ROOM FOR EMPLOYEES: YES OR NO _____
53. SANITARY CONDITIONS: WASH-ROOM FOR EMPLOYEES: YES OR NO _____
54. SANITARY CONDITIONS: TOILETS, SANITARY OR NOT _____
55. SANITARY CONDITIONS: TOTAL NUMBER OF EMPLOYEES IN THE FACTORY _____
56. SANITARY CONDITIONS: FLOOR SPACE PER EMPLOYEE SQ. FT. _____

EMPLOYER _____

REMARKS: _____

INTERVIEWEE _____ DATE _____

PREPARED BY J. S. REED

TRADE STUDY CARD

THE UNIVERSITY OF PENNSYLVANIA
THE HENRY PHIPPS INSTITUTE

INQUIRY BLANK B

NAME _____ ADDRESS _____

PERSONAL:

1. AGE _____
2. SEX _____
3. OCCUPATION AT PRESENT FOLLOWED _____
4. OCCUPATION FORMERLY FOLLOWED _____
5. TRADE LIFE _____ YEARS _____
6. AGE AT GOING TO WORK _____

HEALTH RECORD:

7. HEALTH ON GOING TO WORK; GOOD, FAIR, POOR _____
8. SICKNESS DURING LAST FIVE YEARS; _____ WEEKS _____
9. SICKNESS DURING LAST YEAR; _____ DAYS _____
10. NATURE OF SICKNESS LAST YEAR _____
11. MEDICAL ATTENTION LAST YEAR _____
12. COST OF ILLNESS LAST YEAR, INCLUDING DRUGS _____
13. PRESENT CONDITION OF HEALTH; GOOD, FAIR, POOR _____
14. IS OCCUPATION THE CAUSE OF IMPAIRMENT IN HEALTH? _____
15. AGE AT DECLINE IN PHYSICAL STRENGTH? _____
16. IS OCCUPATION THE CAUSE OF DECLINE IN PHYSICAL STRENGTH? _____
17. ANY SURGICAL OPERATION DURING LAST FIVE YEARS? _____
18. NATURE OF OPERATION AND RESULTS _____
19. ANY INDUSTRIAL ACCIDENT DURING LAST FIVE YEARS? _____
20. NATURE OF ACCIDENT AND RESULT _____
21. ANY OTHER ACCIDENT DURING LAST FIVE YEARS? _____
22. NATURE OF ACCIDENTS AND RESULTS _____
23. LOST TIME ON ACCOUNT OF ACCIDENTS LAST FIVE YEARS; _____ WEEKS

PHYSICAL EFFECTS OF EMPLOYMENT:

24. PRESENT PHYSICAL APPEARANCE; GOOD, FAIR, POOR _____
25. BODILY POSITION AT WORK _____
26. IS POSITION INJURIOUS TO HEALTH? _____
27. HEALTH-INJURIOUS EXPOSURE TO INTENSE LIGHT: YES OR NO _____
28. HEALTH-INJURIOUS EXPOSURE TO INSUFFICIENT LIGHT: YES OR NO _____
29. HEALTH-INJURIOUS EXPOSURE TO GAS AND NOXIOUS VAPORS: YES OR NO _____
30. HEALTH-INJURIOUS EXPOSURE TO DRAUGHTS: YES OR NO _____
31. HEALTH-INJURIOUS EXPOSURE TO PHYSICAL STRAIN: YES OR NO _____
32. HEALTH-INJURIOUS EXPOSURE TO FATIGUE: YES OR NO _____
33. WHEN IS FATIGUE FIRST NOTED DURING THE DAY? _____

PERSONAL HYGIENE AND HABITS:

34. SLEEP PER DAY: _____ HOURS _____
35. TROUBLED WITH SLEEPLESSNESS? _____
36. IS BED-ROOM LIGHT OR DARK? _____
37. SLEEPING ALONE OR WITH OTHERS? _____
38. MEALS: REGULAR OR IRREGULAR? _____
39. MEALS: NOURISHING OR NOT? _____
40. DRINK: INDULGENCE IN ALCOHOLIC? _____
41. BEER: WINE; OR SPIRITS? _____
- SMOKER: LIGHT, MODERATE, EXCESSIVE _____

PHYSIQUE:

42. HEIGHT, IN INCHES, WITH SHOES ON _____
43. WEIGHT IN POUNDS WITH ORDINARY CLOTHING ON _____
44. WEIGHT; GAINED OR LOST IN LAST FIVE YEARS? _____
45. WEIGHT; GAINED OR LOST DURING LAST YEAR? _____
46. CHEST: INSPIRATION _____ INCHES; EXPIRATION _____ INCHES
47. GIRTH: _____ INCHES
48. EYES: NORMAL, NEAR-SIGHTED, FAR-SIGHTED, IMPAIRED _____
49. IF GLASSES OR SPECTACLES ARE WORN FOR HOW LONG? _____
50. HEADACHES: COMMON, PERSISTENT OR RARE _____
51. FAMILY HEALTH RECORD: { FATHER; GOOD, FAIR, POOR _____
 MOTHER; GOOD, FAIR, POOR _____
 BROTHERS AND SISTERS; GOOD, FAIR, POOR _____
52. DEATHS IN FAMILY AND THEIR CAUSES _____

REMARKS _____

INTERVIEWER _____ DATE _____

PREPARED BY J. S. REED

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIATHE HENRY PHIPPS INSTITUTE
238 PINE STREETINDUSTRY

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Address

Contractor for

Address

- | | | | |
|---|-------------|-------------|-----------------------------|
| 1. Building | Stories | Front or R. | Spec. Fact. Loft, Converted |
| 2. Floors occupied | | | |
| 3. Space | square feet | | 4. No. of Employees |
| 5. Male | 6. Female | | 7. Boys 14-16 |
| 8. Girls 14-16 | | | |
| 9. Fire Escapes: sufficient or not | | | |
| 10. Fire Risk: small or serious | | | |
| 11. Fire Drill: practiced or not | | | |
| 12. Emergency Provision: sufficient or not | | | |
| 13. Light: Nat. or Art. | | | |
| 14. Light: sufficient or insufficient | | | |
| 15. Light: Electric, Gas, Oil lamp, etc. | | | |
| 16. Ventilation: facilities adequate or not | | | Good or bad |
| 17. Water Supply: sink or basin | | | |
| 18. Wash Room for Employees: yes or no | | | |
| 19. Dressing Room for Employees: yes or no | | | |
| 20. Lunch Room for Employees: yes or no | | | |
| 21. Toilets: number; sanitary or not | | | |
| 22. Toilets: separation for sexes or not | | | |
| 23. Light and Ventilation: adequate or inadequate | | | |
| 24. General Cleanliness: good or bad | | | |
| 25. Waste Receptacles: provided or not | | | |
| 26. Cuspidors: provided or not | | | |
| 27. Machinery Equipment: safety or dangerous | | | |
| 28. Dust: much or little | | | |
| 29. Dust: methods of removal | | | |
| 30. Irons heated how | | | |

REMARKS

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